

THE MEDICAL AND SURGICAL REPORTER.

No. 2068.

SATURDAY, OCTOBER 24, 1896.

VOL. LXXV—No. 17

ORIGINAL ARTICLES.

ESSENTIAL PAROXYSMAL TACHYCARDIA—REPORT OF FOUR CASES.*

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By essential paroxysmal tachycardia is understood a disorder characterized by the occurrence of paroxysmal attacks of abnormal frequency of cardiac action of unknown genesis. In cases presenting these manifestations there is demonstrable no lesion, either of the heart itself or of other organs, which latter, if present, might engender the symptom tachycardia. We thus distinguish between a disease-entity, so to speak—*essential paroxysmal tachycardia*—and that tachycardia which, although it may manifest itself in paroxysms, is but symptomatic of many and diverse diseased conditions of various organs—*reflex*, or *symptomatic tachycardia*. The subject may be illustrated by detailing the histories of four cases.

CASE 1.—D. B., a native of Ireland and a quarryman by occupation; is a widower, aged sixty years. His father died of typhoid fever, his mother of some cause not ascertainable. He has

had five brothers and one sister. Three brothers and one sister died of causes not ascertainable. Two brothers are living and are presumably well. He has had three children, two of whom are living and well; one died of some cause not ascertainable. With the exception of having had scarlet fever when young, the patient has always enjoyed good health. He never had rheumatism. His cardiac trouble is of ten or eleven years' duration. One day while working on a building he fell a distance of forty feet to the ground, alighting on his left side "near the heart." His ribs are said not to have been fractured, and he was confined to his bed for ten days after the fall. It was at about this time that he noticed something unusual with his heart. Since then he has had trouble with his heart of a similar nature, which usually manifests itself in attacks coming on at irregular intervals. These attacks, while they occur usually in the sequence of some exertion or emotional excitement, are frequently of spontaneous development. They are commonly ushered in by great palpitation of the heart and

* Read before Philadelphia County Medical Society, October 14, 1896.

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vertigo, the palpitation usually preceding the vertigo, though the latter is said to be at times the antecedent symptom, especially when a sudden lowering of the head precipitates an attack, as occasionally happens. The patient characterizes his greatest complaint as weakness, which is present during the attack and sometimes persists for a variable length of time afterward. This weakness is often excessive, but recovery is usually prompt. The patient says that during the attacks he has flushings of the head and neck, with subjective sensations of heat and sweating, but his statements are not to be entirely relied upon. The attack is usually accompanied by some dyspnea, but this is never marked. The man has no pain whatever in the region of his heart or elsewhere, no cough, no expectoration, no headache, no tinnitus aurium, no dimness of vision. The attacks may occur once a month or twice a week, and are apparently not of more frequent occurrence lately than they were some years ago. They last from an hour to two days; usually about a half a day or longer. Some of the minor attacks so little incommode him that he is able to go on with his work during their continuance. In some of the attacks he feels as though he would fall did he not support himself or receive assistance from others. He sleeps well, and is not nervous. His appetite is poor, and he has occasional epigastric distress and distention with gaseous eructations after eating, but no nausea or vomiting or constipation. He has no symptoms referable to his genito-urinary organs. He denies having had any venereal disease. He uses alcohol and tobacco to excess.

On examination the man exhibits evidences of excessive indulgence in alcohol and exposure to all sorts of weather. He is tall and sturdily built; has a rugged countenance, with many minute dilated blood-vessels. He frequently exhibits some tremor following excessive potations, and his statements and answers to questions are as desultory and unreliable as is usual with ardent votaries of Bacchus. Physical examination of his lungs and abdominal viscera is negative. His urine is normal. His cardiac dullness reaches superiorly to

the upper border of the left fourth rib at its junction with the sternum, and inferiorly from the left edge of the sternum to one inch within the left midclavicular line in the fifth interspace, at which point the apex-beat can be felt.* The auscultatory signs vary greatly with the time of observation. During the past ten years, his heart has sometimes been found by my father beating normally from seventy to eighty times per minute. Very frequently it is to be found beating between one hundred and two hundred times per minute, and this often without any apparent discomfort on the part of the patient. I have frequently counted it a hundred and ninety-two and again two hundred and sixteen beats to the minute, and have had the patient remark that his heart was then not bothering him at all. When the patient has what he himself recognizes as a severe attack, it is practically impossible to count the heart-beats. When beating with such excessive frequency, without much annoyance to the patient, the heart varies in action from minute to minute as many as twenty or thirty beats; and it will as suddenly drop from two hundred or thereabouts to a hundred and twenty as it will suddenly mount from a hundred and twenty to two hundred. It formerly used to drop suddenly to seventy or eighty and suddenly mount again to two hundred, and while this may still occur, it has not been observed lately, as the patient is seldom seen. There are no murmurs audible. The second aortic sound is somewhat accentuated. The peripheral arteries are a trifle hard. During the attacks of excessive palpitation it is almost impossible to count the pulse in the carotids or radials. As one would anticipate, the pulse is small and running, and while it can hardly be counted, one can appreciate that it is very frequent. Again, one is at times inclined to think that he discerns in the peripheral arteries about one-half the number of pulsations as there are distinct heart-beats detectable at the precordium; but this observation is not reliable. The left pupil is slightly larger than the right; both react well to light and in

* This area of cardiac dullness has never been found to vary, either during or between the tachycardiac paroxysms.

accommodation. The thyroid gland is not enlarged. Dermographism could not be demonstrated, nor factitious urticaria produced. There are no mottlings of the skin, and no hemorrhagic tendency.

CASE 2.—F. H., a married white man, aged fifty years; is a native of Ireland, and a laborer by occupation. His parents and five brothers died of causes not ascertainable. One sister is living and well. He has himself had two children, both of whom are living and well. He always enjoyed good health, until fifteen or sixteen years ago, when he had rheumatism in his left hip, and he has been more or less troubled in the same way ever since. Seven years ago he had an attack of influenza, with marked pulmonary symptoms, which he thinks progressed to pneumonia, but this is doubtful. It was directly subsequent to this that his heart commenced to trouble him. He then began to suffer with attacks of excessive palpitation of the heart, accompanied at times by some precordial pain and dyspnea, a sensation of fulness in the head, headache, vertigo, dimness of vision, left-sided tinnitus aurium, flushing of the left side of his face and neck, with profuse perspiration in the same regions; anxiety, and frequent sensations as though he would fall. He is not known ever to have fallen, and never manifested any cyanosis, nor did he ever lose consciousness. The attacks were and frequently are precipitated by stooping at his work. They are of variable severity and duration, lasting from five minutes to a day. The minor ones may be repeated several times in one day. Since they commenced he has not passed an entire week without at least one attack of palpitation of the heart, which, however, is not always accompanied by precordial pain and the other symptoms already detailed. During the attack and for a variable length of time afterward, depending upon its severity, he is very weak. While the majority of the minor attacks, unless provoked by stooping or other manifest cause, develop suddenly, without any warning, he is usually able to presage the development of a severe attack by the occurrence of a premonitory epistaxis, which has frequently been of some profuseness. He has no

cough and no expectoration. His appetite is good, although he has some epigastric distress and distention after eating. These, when excessive, sometimes induce an attack of cardiac palpitation. He has no nausea and no vomiting, and his bowels are regular. He has no genito-urinary symptoms, never had any venereal disease, and never used alcohol in any form whatever. He uses tobacco to a slight extent. About the beginning of May, 1896, he was suddenly seized with an attack which proved to be the most severe he had ever had. He was affected with great palpitation of the heart, accompanied by dyspnea and cough. He was exceedingly weak and much prostrated, and had a great fear of impending death, not associated with any actual pain about the heart, but rather with precordial distress. Repeated examinations of the lungs, abdominal organs, and urine gave always negative results. The apex-beat was faintly palpable in the fifth interspace, three-quarters of an inch within the left mid-clavicular line. The cardiac dulness reached superiorly to the top of the left fourth rib at its junction with the sternum, and inferiorly extended from the left edge of the sternum to the region of the apex-beat. The heart-beats ranged in number between two hundred and ten and two hundred and twenty per minute uninterruptedly for almost three weeks, and then gradually subsided to a hundred and fifty, and in the course of several days suddenly fell to seventy. During the following month the heart-beat varied exceedingly. It would suddenly mount from seventy per minute to a hundred and seventy, and as suddenly fall to seventy again. It would bound to two hundred or more and remain so for a few moments or an hour or more, and suddenly fall again to about seventy. No murmurs were audible. During the times of these excessive beatings it was almost impossible to count the pulse in the peripheral arteries; at all events no reliance could be placed upon the accuracy of the supposed results of such attempts. As the patient began to improve, gain strength, and become able to leave his bed, his heart-beat fell to sixty per minute, then to fifty-six, at about which rate it continued for a

couple of days. Then suddenly one day while under observation it bounded to a hundred and seventy-six, to fall again shortly to seventy. Subsequently the man began again to improve and continued to do so, having occasionally attacks of slight degree and of not much more than momentary duration. While rather weak he was gaining strength. His pulse, however, continued somewhat arhythmic, his heart-sounds were not clear, and his heart beats between sixty and seventy times per minute. On September 19th, following some excessive exertion, he was suddenly attacked with another paroxysm which was attended with vomiting. The heart-beat was two hundred and ten per minute. Digitalis and bromids were given, and on the following day the man was very much improved, his pulse being forty-four per minute. There is no inequality of his pupils, both of which react well to light and in accommodation. There is no prominence of the eyeballs and no enlargement of the palpebral fissures. There is a marked tremor of the hands and fingers when they are extended. The thyroid gland is not enlarged. There is no hemorrhagic tendency, other than the epistaxis noted. Dermographism is readily demonstrated, but the markings do not persist long. Factitious urticaria could not be developed.

CASE 3.—K. K., a white married woman, aged twenty-six years; was a native of Scotland, and a housewife by occupation. Her father had died of some cause not ascertainable, her mother of carcinoma of the pancreas.* Three brothers and seven sisters are living and well. She has had three children, all of whom are living and well. She has never been ill except when complaining of her heart. She does not recollect that it troubled her when she was attending school, but is certain that it did shortly after her withdrawal from school, when about fourteen years of age. Since then she has had attacks of palpitation of the heart, with or without dyspnea, slight vertigo, flushing of the head and neck, subjective and objective sensations of heat and sweating of the same regions. These attacks occurred irregularly about twice a month

or thereabouts, and were usually sequential to some undue exertion or excitement. They would last about five or ten minutes, after which the patient would again be as well as ever. During her last pregnancy, which terminated in a normal labor May 16, 1896, she was subject to attacks of ordinary severity and duration. One week, and again two days prior to the birth of her child, she had attacks of much more than average severity and duration, both of which were attended with great weakness, persisting for some time after the cardiac palpitation had ceased. Twelve hours after her delivery she was suddenly, without apparent cause, seized with great palpitation of the heart, accompanied by the other symptom already detailed and especially marked by great prostration. This attack continued for fifteen hours, and during its continuance the heart beat uninterruptedly between a hundred and eighty and two hundred and ten times per minute. It then suddenly fell to eighty, but the prostration continued for a day or more. There has since been no recurrence of the tachycardia. Physical examination of the lungs, heart, and abdominal viscera is negative, and the urine is normal. The thyroid gland is not enlarged, and there are no mottlings of the skin, no hemorrhagic tendency, no tremor. The patient has had no tinnitis aurium, and no dimness of vision. The pupils are equal, not dilated, and react well to light and to accommodation. Dermographism is easily demonstrated, but the markings fade after a few moments.

CASE 4.—L. C., an unmarried woman, aged twenty-two years; is a native of the United States. Her father was killed in the coal mines; her mother died at the age of fifty-seven years, of debility and gastric atony. Two sisters died in infancy of causes not ascertainable; one, aged seventeen years, of typhoid fever; one, aged twenty-two years, of pneumonia; and another, aged twenty-eight years, of rheumatism, with valvular disease of the heart. The patient had always enjoyed good health until three years ago, when her sister died of typhoid fever. Two weeks after this event the patient, in apparently good health, though greatly worried, was suddenly seized while in bed with

* *University Medical Magazine*, November, 1895.

great palpitation of the heart and marked dyspnea. These continued for three or four days, the heart beating one hundred and thirty-five times per minute. The patient then apparently recovered, and in two weeks was as well as usual. She then had another attack, accompanied by a chill, but she recovered in twenty-four hours. During the following six months she was usually very well during the day, but almost nightly she would have an attack of tachycardia, which, coming on about twelve or one o'clock, would continue frequently until daybreak. The attacks gradually decreased in severity and frequency until at the end of about six months the patient was able to do light housework. She remained free from severe spells for two years, when she had another, which, however, did not continue long. The patient states that her first severe attack occurred during the menstrual period, and even now the recurrence of this period is very prone to be attended with some palpitation of the heart. She began to menstruate when fifteen years of age (two years prior to the first paroxysm of tachycardia). Menstruation is and has been usually regular and painful. She always sleeps with her head high for the purpose of hindering the development of attacks of tachycardia. She is careful to guard against "cold," which brings on a mild attack. She is, in consequence, worse during winter. She never had rheumatism, but is occasionally "dyspeptic." Physical examination of heart and lungs reveals no deviation from the normal. Her urine is normal. She is nervous, annoyed by trifles, and asserts that her greatest enemy is "worry." She has no enlargement of the thyroid gland, and no exophthalmos. She says she has no flushings unless the attack be very severe, when she is also greatly prostrated. Any exhausting work brings on an attack.

The cases herein reported present, upon critical examination, certain very interesting features. While symptomatically they possess many points in common, each case manifests certain individual peculiarities. Two of the patients were males and two females. Their ages at present range from twenty-two to sixty years (1, 60; 2, 50; 3, 26;

4, 22). At the time of onset of the affection their ages varied between fourteen and fifty years (1, 50; 2, 43; 3, 14; 4, 19;) and the affection has lasted in the individual cases from three to twelve years (1, 10; 2, 7; 3, 12; 4, 3).

The essential feature of each case is the paroxysmally recurring attacks of extraordinary rapidity of the heart's action, without adequate obvious cause, predisposing or exciting. Certain of the paroxysms, however, are preceded by various manifestations which, while in many instances obvious, can hardly be looked upon as adequate to call forth the attack in the particular individual. In cases 1 and 2 there is a more or less intimate relationship between the spells of vertigo and the attacks of tachycardia. The two manifestations may occur simultaneously or independently of each other, and either may precede the other in time of development. The vertiginous spells are sometimes engendered in both patients by physical activity, such as lowering of the head. Again they develop without manifest excitation, occasionally preceding in time of development the attack of tachycardia. They might possibly be looked upon as causal of the latter, but they may not inappropriately be considered part of the symptom-complex of the tachycardia paroxysm. It is quite probable that any sudden effort or change from ordinary conditions suffices to occasion the vertigo, and it is after this manner that the excessively rapid heart-action operates.

In cases 1 and 3 it is impossible to assign any cause for the development of the affection. In case 1 the disorder is said to have manifested itself subsequent to a fall, but it is extremely improbable that any real association exists between the disease and the accident. The disorder in case 2 is said to have come on directly after an attack of influenza. There are no sound reasons for denying that the influenza had a positive influence in the development of the disorder in this case. In this respect the case resembles those lately referred to by Sansom,¹ who, in a study of one hundred cardiac cases due to influenza, found thirty-seven cases of tachycardia, twenty-five of arhythmia, twenty-three of pain, five of bradycardia, and ten of organic disease of the heart.

In neither case can alcohol or tobacco or other toxic agent be held answerable for the disease. The patient of case 1 overindulges habitually in alcohol, and uses tobacco to great excess. The patient of case 2 has been a total abstainer from alcohol for at least the past twenty-five years, and smokes but little. The patient of case 1 has made repeated experiments to determine whether or not alcohol had any influence on the severity or frequency of his attacks of tachycardia. He found that he had on an average as many paroxysms when not drinking as when drinking; nor could he establish any causal relationship between indulgence in alcohol and the individual attacks. A severe attack might or might not follow excessive potations, and if an attack developed during a temporary interval of abstinence, repeated experiences showed that neither its duration nor its severity was with certainty influenced one way or the other by immediate indulgence.

The precise time of the development of the disorder in case 3 could not be ascertained, nor could any cause be discovered. The severe attack came on twelve hours after parturition, to which we can hardly assign any causative influence. The two occurrences were separated by a considerable interval of time (twelve hours), and the woman had previously been twice confined without the development of any such cardiac symptoms, although they were present at other times. Cases similar to this have been reported by Stocker,² Gerhard,³ and others. In none of these three cases is it possible to discover any reflex cause capable of inducing the paroxysms.

Case 4 we are disposed to view as one on the border-line between essential paroxysmal tachycardia and reflex tachycardia. The first attack came on during menstruation, and each menstrual period is still likely to be attended with some increased frequency of heart-beat. At some menstrual periods severe paroxysms of tachycardia occur, and many spells develop at other times from unknown causes. While in many respects this case appears to be one of tachycardiac reflex from the female genitalia, it is more proper to view it as one of those instances of tachycardia,

many analogous examples of which we have in other disorders, particularly of the nervous system, in which an affection takes its origin in a definite cause and persists whether or not the inducing cause remains operative. Finally, we must refer to the frequency with which, in all the cases, attacks are precipitated by excessive exertion.

In contradistinction from what might *a priori* be anticipated, these spells of abnormal frequency of the heart-beat are unaccompanied by marked dyspnea or cardiac pain or distress. On the other hand, when the attacks are severe there are manifest signs of general bodily disturbance, as evidenced by excessive weakness, which is entirely independent of any possible engendered prostration physically from fear of impending bodily calamity. This is seldom or never present.

Attention has been directed to the suddenness of the onset of the individual paroxysms, and to the almost equal suddenness with which many of them terminate. Again, other attacks decline much more gradually. During some of the spells the heart-beat is subject to marked variations in frequency, and these develop and cease as rapidly as do the attacks themselves. The paroxysms are of varying duration,—from a moment to three weeks or more.

Particular attention is to be directed to the fact that in none of the cases was it possible to discover any cardiac lesion whatever. In cases 1 and 2, in which the area of cardiac dulness was determined during paroxysms, this was found normal, as it was also between the attacks. It was also normal between the paroxysms in the other cases, in which no notes were made of any exact observations upon this point during a seizure.

Finally, we must refer to the very manifest evidences of general vaso-motor disturbance in all the cases. These were particularly marked in cases 1 and 2. They consisted for the most part in subjective and objective sensation of heat, confined especially to the head, face, and neck and accompanied by profuse perspiration, limited to the left side in case 2 and said to be general in cases 1 and 3. There are very evident symptoms of vaso-motor paralysis. As further indicating the vaso-motor instability, we

refer to the ease with which dermatographism was demonstrable in cases 2 and 3; to the marked susceptibility to the influence of cold in case 4; and to the occurrence of epistaxis premonitory to the tachycardiac paroxysms in case 2. None of the other cases exhibited any hemorrhagic tendency. Even after centrifugation, no erythrocytes were discernible in the urine of any of the patients. These vaso-motor disturbances are asserted to have been absent in some of the reported cases, but in the majority of instances but little attention has apparently been directed to them. Rather extended reference to the subject has been made in a communication of Zunker⁴.

Interesting as is the symptom-complex of this affection clinically, by far the most interesting feature in connection with it is that concerning its pathogenesis. An important advancement was made in the study of the subject when Fraentzel⁵ and Bouveret⁶ drew attention to the necessity of distinguishing between tachycardia as a symptom and tachycardia as a disease. As, however, the term tachycardia is still indiscriminately employed to designate diverse morbid conditions, it is primarily essential to define that to which we apply it. Tachycardia (more properly polycardia), meaning rapid action of the heart, in practical application should be employed to designate such a condition. It is at once evident that all instances of rapid action of the heart are not of the same nature nor due to the same cause. The term tachycardia therefore requires some qualification to indicate its nature in particular instances. Rapid action of the heart may be a permanent or a transitory affection. If the latter, it may, or may not, occur in paroxysms, and if the former, the permanent tachycardia may be augmented by the occurrence of acute exacerbation of greater frequency of heart-beat than is usually present. Of permanent tachycardia, numerous instances have been recorded. The cases that after death have been subjected to careful pathologic study have usually disclosed some lesion of the cardiac centres in the medulla, or of the vagus trunks or neighboring structures.

Tachycardia, which is but transitory,

may occur in paroxysms or it may not. Under either condition it may be symptomatic of various diseased conditions of the different organs. When, however, it occurs in paroxysms of unknown genesis it is distinguished as essential paroxysmal tachycardia.

Symptomatic or reflex tachycardia may be due to a variety of causes, viz.: 1, anemia; 2, fever; 3, acute infectious diseases (diphtheria, scarlet fever, typhoid fever, influenza, etc.); 4, chronic infectious diseases (syphilis, tuberculosis, malaria, etc.); 5, organic diseases of the heart (of the endocardium, pericardium, or myocardium); 6, various emotional disturbances (shock, fright, etc.); 7, intoxications (tea, coffee, tobacco, alcohol, etc.); 8, nephritis, especially at a late stage of the cirrhotic form; 9, rheumatoid arthritis; 10, exophthalmic goitre; 11, chorea; 12, epilepsy; 13, hysteria; 14, neurasthenia; 15, masturbation and excessive sexual indulgence; 16, organic disease of the nervous system, brain, spinal cord, or nerves; 17, various reflex influences emanating from the brain, heart, stomach, liver, intestines, lungs, uterus, ovaries, gall-bladder, kidneys, prostate gland, urinary bladder, anus, tracheal plexus, aspiration of ascitic effusion; 18, convalescence from any protracted disease. In view of the multiplicity of affections just cited, and which could be added to the unwisdom of attempting a discussion of the pathogenesis of tachycardia is evident. The pathogenesis of such tachycardias is practically the pathogenesis of disease in general. When we attempt to classify such tachycardias we meet with new difficulties. Is the tachycardia of scarlet fever due to the fever, to the general infection, to the circulation in the blood of some toxin exerting a deleterious influence on the medulla, the pneumogastric or sympathetic nerves, the intracardiac ganglia, or the heart-muscle? Is the tachycardia of typhoid fever due to the fever, to the general infection, to the anemia, to the heart-weakness, or to what? Many of the tachycardias enumerated are justly regarded as natural concomitants of the affections they attend, and others are so manifestly reflex that they cease with the non-operation of the inducing cause—*cessante causa, cessat effectus*. These

tachycardias are common, as attested by the daily experience of most practitioners. Within the past three months I have, in private practice, observed two cases in which the heart-beat was respectively 135 and 146 per minute, in both instances during alcoholic debauches. It is interesting in this connection to note that Déjérine⁷ has demonstrated in some of these alcoholic tachycardias, degeneration of some of the fibers of the vagus. At the Medical Dispensary of the University Hospital, I saw lately a patient with paroxysmal attacks in which the heart-beat ran up to 135 per minute as a reflex consequent upon catarrhal gastritis. I have lately reported another case in the Philadelphia Polyclinic.⁸ The patient had aortic insufficiency and became the subject of apoplectiform bulbar paralysis, subsequent to which his attacks of rapid heart-beat were much more frequent than previously.

Accompanying all of the conditions already enumerated, tachycardia can be referred to some diseased condition of the body in general or of one or more of its organs. It is therefore symptomatic or reflex, and ceases as soon as the influences upon which it depends have been removed. Quite different and distinct are those cases designated essential paroxysmal tachycardia, which are so called because neither clinically nor pathologically can any cause be discovered to account for the development of the affection.

In studying deviations of the heart-beat from the normal it is well to commence with a consideration of the fundamental principles of the cardiac mechanism. The strength, rhythm, and frequency of the heart-beats are dependent upon the accelerating influence of the sympathetic nerves, the inhibiting influence of the vagus, and the regulating influence of the intracardiac ganglia. To these influences must be added that dependent upon the state of the nutrition of the heart, and that which the vaso-motor nerves exert by their influence upon the contractility and distensibility of the blood-vessels. In addition, experiments have of late tended to show that the heart-muscle itself possesses the inherent property of automatically contracting independently of any nervous

influence, and that the rhythm of the normal cardiac action is dependent upon the functional activity of the intracardiac ganglia (Landois.⁹)

It is not probable that any disturbance of the intracardiac ganglia could induce the paroxysms; nor is it probable that they are even secondarily involved to any marked degree. As remarked, they preside essentially over the rhythm of the cardiac contractions, and in the vast majority of the seizures in essential paroxysmal tachycardia the heart-beat and the pulse are regular (Huber.¹⁰)

The heart-muscle itself cannot be much altered. A few cases have come to necropsy, notably those reported by Riegel,¹¹ Finney,¹² Bristowe,¹³ Fraentzel,¹⁴ Brieger,¹⁵ Sollier,¹⁶ West,¹⁷ Hochhaus,¹⁸ and others. In the majority of the cases, post-mortem examination of the heart either yielded negative results or revealed but slight deviations from the normal. In none was there discovered any characteristic lesion or any lesion that with any reason could be held accountable for the production of the disorder. In several instances there existed some degree of interstitial myocarditis, which fact led West¹⁶ to formulate the opinion that paroxysmal tachycardia is "not due to functional disturbance alone, but to an organic lesion, and that that lesion is in all probability in the muscular substance" of the heart. This view has found but few supporters, among them Brannan,¹⁹ and is manifestly untenable. The interstitial myocarditis is much more likely an accidental concomitant. If it bore a causal relationship to the tachycardia we should find the latter of very frequent occurrence. It is also well known that even extensive degrees of interstitial myocarditis frequently exist without occasioning any symptoms whatever. Irregularity and frequency of the heart-beat and the pulse are usually the more prominent symptom when any are present, and the former is much more likely to be encountered and is always the more marked. Further, it is not at all improbable that the persistence and frequent repetition of the tachycardiac paroxysm may be the cause and not the result of the interstitial myocarditis.

There remain then to be considered paresis of the vagus and stimulation of

the sympathetic. It has been demonstrated that paralysis of the sympathetic has no influence whatever over the cardiac mechanism (Nicati),¹⁹ whereas stimulation of the cervical sympathetic gives rise to increased frequency of the heart-beat. In the cases herein reported, excepting the increased frequency of the heart-beat (referable to other causes) there is no evidence whatever of sympathetic irritation. All of the cases manifest signs of vaso-motor disturbance, and all of these signs are parietic in nature. We therefore conclude of necessity and by excluding other possibilities, that the seizures of essential paroxysmal tachycardia are due to some transitory disturbance of the functional activity of the vagus—most probably the centre in the medulla. The disorder is a most extraordinary one. Concerning its manner of development we can but theorize. There are doubtless many instances in which the heart-beat does not become so excessively frequent, remaining about 120 or 130 per minute, and which may be due to sympathetic irritation. Such, for instance, is a plausible explanation of the phenomena of case 4. There occur in all likelihood, other cases in which the symptoms are due to both paresis of the vagus and stimulation of the sympathetic, as originally suggested by Gerhardt, who is of the opinion that the majority of all cases of tachycardia are due to paresis of the vagus, those with excessive pulse-frequency to paresis of the vagus and stimulation of the sympathetic, and minor forms with a less frequent pulse-rate to stimulation of the sympathetic alone.

The unreliability of using as a criterion the rate of the heart-beat in endeavoring to distinguish between the various causes or natures of the tachycardiac paroxysm led Nothnagel²⁰ to formulate the following two rules: (1) If during the tachycardiac paroxysm, the pulse-rate is very high, the rhythm maintained and the heart-impulse weak; if there are present no other symptoms, except such as may be regarded as secondary to incomplete emptying of the heart; and if finally there be present a paresis of other nerve-tracts running in the vagus, in the particular case, we may assume a paresis of the vagus. (2)

If during the tachycardiac paroxysm, the heart-impulse is strong; if the peripheral arteries are well filled and firm (not absolutely essential); and if there be present other manifestations of vaso-motor irritation, the supposition of an excitation of the accelerator nerves is justified. Although these rules are in accord with the facts regarding the apex-beat in cases 1 and 2, that they are hardly generally applicable is evident, from the fact that in many of the reported cases supposed to be due to paresis of the vagus, the cardiac impulse was strong. There exists, in many cases, a remarkable difference between the apparent strength of the apex-beat, and the small, weak, scarcely perceptible pulse.

Again Fraentzel has proposed the dictum that a paroxysm relieved by an injection of morphin may be considered to be due to sympathetic irritation, while one relieved by digitalis depends upon paresis of the vagus. But neither of these rules can be relied upon. Single paroxysms in the same case may at one time or another be relieved by either of these medicaments, and again at times neither will prove of any service. The affection manifests itself in paroxysms, many of which develop and cease absolutely, unaffected by any therapeutic measure.

Martius²¹ in a recent monograph on the subject, holds that the attacks of essential paroxysmal tachycardia are due neither to stimulation of the sympathetic, nor paresis of the vagus nor both, but that the essential nature of the affection consists in an enormous acutely-occurring dilatation of the heart. According to him there occurs first a lessening in the tone of the cardiac muscle, resulting in great dilatation. At the same time the physiologic property of the heart to produce maximal contractions is lost. There ensue therefore partial contraction and incomplete emptying of the ventricle at each systole. Of necessity there must result slowing of the circulation and dyspnea, unless the weakness of the contraction is compensated for by their increased frequency. The tachycardia is therefore of the nature of a life-preserving compensation. Hochhaus concurs in the same opinion.

The majority of authors, however, with Bouveret, Huppert,²² Winternitz,²³ and Sansom view the dilatation of the heart as a purely secondary and not necessary manifestation of the paroxysms. Sansom, in reporting forty-six cases, asserts that, in the majority, the heart-dulness was normal. "In three cases only were there signs of dilatation, and the probabilities seemed strong that such dilatation was the consequence of the perturbation, and due to no other cause." That a dilatation of the heart is not a necessary concomitant of the paroxysm is further very evident from a recent communication of Loeser.²⁴ In confirmation of this view I may mention cases 1 and 2 of my own, which were studied with particular reference to this sign, and in which dilatation of the heart was never observed, although looked for during paroxysms. Dilatation of the heart may or may not occur during a paroxysm. In a particular individual it may be present during one attack, and absent during another. There are many reported cases in which the affection persisted for years, and in which no dilatation ensued, although it did develop in other cases. The facts therefore do not warrant the deductions of Martius, and dilatation of the heart cannot be considered a pathognomonic sign of the paroxysms. Wood²⁵ likens the tachycardiac paroxysm to an epileptic seizure, ascribing its development to a discharge of nerve-force and not to any temporary paresis of the vagus. This view, however, has not found general adoption.

We come, therefore, to regard the vast majority of the paroxysms as due to a transitory paresis of the vagus, a view warmly supported by Rosenbach,²⁶ and many others; and we believe, further, that the locus of the disturbance is in the medulla. We have arrived at this conclusion by exclusion, but there are, in addition, many positive facts that corroborate this view. In many carefully reported and trustworthy observations, evidence has been adduced to show that the central tone of the vagus, the removal or loss of which occasions the paroxysms, may be compensated for in many ways, and the attack brought to an immediate end. It has been repeatedly demonstrated that, in some cases

at least, it is possible, by means of mechanical irritation on the vagus in the neck, as by pressure, to bring the paroxysm to a sudden termination, or to at least reduce very materially the excessive frequency of heart-beat. The same result has been achieved by applying an electric current to the vagus in the neck, or even by the simple procedure of swallowing a glass of cold water or a cupful of hot coffee. All of these facts serve to indicate that the peripheral termination of the vagus are intact, or at least capable of responding to stimuli. The disorder is, therefore, due to a disturbance of the functional activity of the cardiac centers in the medulla, whereby the normal influence exerted by physiologically-active pneumogastric nerves upon the heart is no longer operative. We look upon the associated symptoms in the cases herein reported—those indicative of vaso-motor paresis, as additional support of this vagus theory. The nuclei in the medulla presiding over the vaso-motor activities, are in close juxtaposition to those governing the cardiac mechanism, and as they are intimately associated anatomically, so also are they closely related functionally. It is, therefore, but fair to assume that any influence which seriously disturbs one might exert considerable influence also over the other.

The affection is a neurosis of the vagus. But what do we understand by such a neurosis? How does it operate? What is the *modus operandi* of the development of such sudden changes from a normal pulse-rate to 200 or more per minute, and of equally sudden changes from 200 to 70? It is in this connection that I venture to propose as explanatory of the phenomena of this disorder an adaptation of a theory lately advanced by Dercum,²⁷ Robl-Rückhard, Lépine, and Duval. It is that which contends that the neuron is not an absolutely fixed morphologic element. This theory receives considerable support from certain demonstrated facts. Wiedersheim (quoted by Dercum) observed the nerve-cells in the oesophageal ganglia of living animals of very low order to be capable of movement, which he describes as slow and flowing. A single observation of this nature is of utmost importance, and serves to counteract theorizing to the

contrary. In the words of Dercum, "I do contend that it is in the highest degree probable that such facts as we have, scanty though they be, are in favor of the view that a certain amount of movement does take place in the terminal portions of their processes [of the neuron], their dendrites and their neuraxons, although this movement is probably small in extent."

We now know, thanks to the investigations of Golgi, Ramon y Cajal, Leuhossek, Van Gehuchten and others, that the nervous system is made up of a number of distinct neurologic entities,—the neurons. These are as distinct and individual as other cells throughout the body. Their processes—dendrites, neuraxons and collaterals—do not fuse and anastomose, as formerly believed, but they are sharply defined and limited. They bear no relation to similar processes of other cells save that of proximity or possibly contact by means of their arborescent filamentous terminations. It is at least these filamentous terminations that we believe capable of motion. They possess the properties of extension and retraction. Properly extended these filamentous terminations of one neuron stand in normal relation to the filamentous terminations of other neurons with which they are in physiologic accord. The functions of the body are thus maintained under the influence of the nervous system and are properly executed. When, however, these terminals of neurons for any reason retract, other neurons, which under normal circumstances receive from the first-mentioned class impulses necessary for the proper execution of their functions, lack these essentials, and are no longer capable of normal physiologic action. Transmission of impulses cannot take place unless the terminals are in a certain degree of proximity. More widely separated, interchange of action ceases. This is the theory adduced by Dercum to explain many of the phenomena of hysteria, hypnotism, sleep, etc.; and it is this same theory that I believe most fitly explains the phenomena of essential paroxysmal tachycardia. The loss of tone or control of the vagus is thus accounted for, and particularly the suddenness with which it is lost, and the suddenness with which it is regained. This

excessive motility of the terminal filaments may be induced by many causes, as for instance sudden excessive demands beyond the functional capacity of the cell, or sudden disturbance of normally-existing conditions, such as may be engendered by excessive exertion or sudden stooping, as in our patients; or again defective nutrition or fatigue, which lessens the functional activity of the neuron, and thus perhaps as a life-preserving measure they retract their terminals. The instant they reach that degree of separation through which impulses cannot be transmitted from one to the other their influence suddenly ceases. Subsequently, when nutrition has restored the cell to its normal status, protrusion of the processes takes place, functional activity and the normal relationship of physiologically-allied neurons is once more established, normal condition exist, and the tachycardiac paroxysm suddenly ceases. Temporary reduction in the rate of heart-beat during paroxysms are abortive attempts of physiologically incapable cells to again assume their functions. Nutrition has not yet restored them to that condition necessary for physiologic activity, and they fail in their endeavors until fully replenished. There are admittedly many loopholes in this theory, but it appears to me attractive, and certainly as plausible as any and much more so than many, that have heretofore been advanced to explain the highly interesting phenomena of that curious disorder, essential paroxysmal tachycardia. Perhaps some day our means of investigation will permit of a demonstration of changes, concerning which we can now only speculate.

The diagnosis of the affection is under ordinary circumstances attended with but little difficulty. We primarily exclude all cases of permanent tachycardia, and then those cases which arise reflexly from disturbance or disease of any of the bodily organs. In this connection we remember that many cases arise from reflex causes of very obscure nature. But the symptom-complex of the disorder is so characteristic, that with a knowledge of the existence or possible presence of the affection, coupled with the otherwise negative result of an examination of the patient, one could hardly

mistake it for anything else. We will further be careful not to confound the cases under consideration with those of acute and chronic angio-spastic dilatation of the heart to which Jacob²⁸ has lately directed attention. This is a disorder in which a general angiospasm, accompanied by chill, leads to excessively frequent heart-beat and subsequent dilatation of the heart. In essential paroxysmal tachycardia there are no symptoms of angiospasm. The diagnostic features of the affection, however, have already been sufficiently discussed. We must not neglect to bear in mind that well-described symptom-complex, to which Cohen has given the name vaso-motor ataxia, one of the features of which may be tachycardia.

The prognosis of the affection refers to the possibility of a cure being effected and to the danger attending the individual paroxysms. The obscure nature of many of the causes engendering attacks of tachycardia bestows an added impulse to the search for such cause in the hope that the disorder may be reflex, under which circumstances it will cease with the removal of the inducing cause. The prognosis of essential paroxysmal tachycardia is guardedly unfavorable as to cure. Some cases are subject to spontaneous cure; others endure for a long number of years, occasioning the patient but slight discomfort; while in some instances death has occurred during a paroxysm. We cannot presage the duration of either a paroxysm or the disease.

The treatment of the disorder is best comprised in the term symptomatic. In some instances, the measures that we employ symptomatically to alleviate the paroxysm have been followed by a permanent cessation of the disorder. It is well to remember that paroxysms have been controlled by pressure on the vagus in the neck, by electric stimulation of the vagus in the neck, by pressure over an ovary, by the drinking of cold water or of hot coffee, by deep inspiration and retention of the air. Of great value further is the application of an ice-bag to the chest and the swallowing of small bits of cracked ice; or a cold douche may be applied to the chest, abdomen or neck. Attacks of long duration are frequently favorably influenced by hy-

podermic injection of morphin. It is, however, worse than folly to resort to such a measure for the relief of attacks which, in all probability, will cease spontaneously in a few moments. Digitalis is at times resorted to, and its use is thought to be followed by satisfactory results. Various nervines, such as valerian, asafetida and zinc, have been recommended, but they are of doubtful utility. The methodical use of galvanization of the vagus in the neck has its supporters. Much more permanent effects, however, may be anticipated from strict attention to hygienic measures, the avoidance of excessive exertion, good diet and particular regard for the general nutrition and welfare of the body.

We have thus referred to an affection whose very name implies ignorance of its real nature, whose clinical manifestations are most interesting and for the explanation of whose phenomena we have suggested an adaptation of a lately advanced and alluring theory.

The cases reported were observed in the private practice of my father, Dr. Joseph V. Kelly, to whom I am indebted for the opportunities of seeing the patients, for some of the notes and for many kind suggestions.

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THE PROPER POSITION OF CELIOHYSTEROPEXY IN GYNECOLOGY.*

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There is, perhaps, no question in the field of gynecology upon which more diametrically opposite views have been expressed than that of celiohysteropexy. This operation has been extolled by some, condemned by others, and accepted with modifications by a few. Some definite place in gynecologic surgery it must occupy, and it is to define this position that I would ask the opinions of the members of the society.

An observation that, when the pedicle of an ovarian cyst had been fixed in the abdominal wound, it was common to find that a previous retroflexion would disappear, caused Kœberlé, in 1869, to remove a healthy ovary in a case of retroflexion and stitch the pedicle in the lower part of the abdominal wound. For the introduction of this idea into America we are indebted to Howard Kelly, who reported his first case at a meeting of the Philadelphia Obstetrical Society, November 4, 1886. Kelly sut-

ured the left cornu of the uterus to the left of the median line of the abdomen, after having removed the left appendage, and recommended that in performing such operations, both cornua be sutured to the abdominal wall. This operation for the cure of obstinate retrodisplacement he considered to be established, although the indications for its performance would be, he claimed, rarely met. The operation has since that time suffered frequent modifications in its technique, and from a procedure rarely indicated had, until within a short time, become one of frequent performance.

Recently, much adverse criticism has been advanced. The principal arguments urged against the procedure have been :

1. That it is often followed by dragging pains which are so severe as to require subsequent celiotomy for the separation of the uterus from the abdominal parietes.

2. That it renders the woman liable to abort in the early months of pregnancy.

3. That subsequent labor is likely to

*Read before the Philadelphia County Medical Society, October 14, 1896.

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be complicated, rendering forceps, turning, the induction of premature labor, etc, necessary resorts, and in some cases in which pregnancy had progressed to term, Cesarean section became necessary to effect delivery.

The dragging pains following celiohysteropexy, in some cases, may be explained by supposing that the uterus has been drawn, in the operation, too high up in the pelvis. If we consider, with Dr. Emmet, that the uterus, through its natural supports, occupies a certain plane in the pelvis, and that when prolapsed below this normal plane symptoms will arise from traction and tension upon the ligaments, we may realize that, also, if drawn above this zone the same traction applies, though in an opposite direction. In adapting the fixation, therefore, the distance above the pubic symphysis to which the fundus of the uterus will reach with ease must be determined, and should the operator make his attachment higher up the painful symptoms will occur, which are nearly as distressing as those before operation.

That celiohysteropexy predisposes to abortion is an objection aimed at the method employed and not at the operation. If the uterus be fixed to the abdominal wall, either by unyielding buried sutures or by a broad firm adhesion, it will not uniformly enlarge as the developing ovum demands. It is probable that the uterine contents may then be expelled. That this does not occur, however, in many cases is evident. Should it be possible to suspend the uterus in its normal position without firm fixation, providing for it a considerable latitude of mobility, such a danger would be minimized. Even should abortion result in a large number of subsequent pregnancies, the operation itself presupposes a previous retrodisplacement, in which state pregnancy probably would either not take place or be shortly followed by abortion. Thus, a large percentage of abortions after operation would be offset by the small percentage of births in women who otherwise would never have become mothers.

That labor is likely to be complicated and that Cesarean section should have been a necessary resort in a few cases after this operation, is again a fault of the method employed. Should it be pos-

sible to afford the uterus a light support which would permit a considerable latitude of movement, and which would either stretch or rupture during the enlargement of the pregnant womb, surely no serious result could be anticipated. When, however, the fundus of the uterus is broadly adherent to the abdominal parietes, either by fibrous connective tissue or by an unyielding buried suture, the enlargement of the uterine cavity takes place by the stretching of the posterior uterine wall, while the fundus being unable to rise in the abdomen, the hypertrophy of the anterior wall will rotate the cervix backward and upward as far as the utero-sacral ligaments and the posterior vaginal wall will permit, and then interpose itself as a thick muscular barrier between the fetus and the birth-canal. By carefully selecting a method of suspension by which firm fixation is avoided, these objections are overcome.

The operation that has afforded me the best results in child-bearing women consists in a small median incision under strict aseptic precautions, the separation of the uterus and appendages from their adhesions, the elevation of the fundus, the determination of the point above the pubic symphysis to which the uterus may be raised without undue tension upon its ligaments, and its suture with two stitches. For suture-material, boiled silk-worm-gut is preferred, passing the first strand through the entire thickness of the abdominal wall at the point selected, through the fundus of the uterus in a line midway between the two tubal attachments, embracing about one-half inch of the uterine tissue, and through the abdominal wall on the opposite side. The second suture is introduced similarly one-fourth inch above the first, through the abdominal wall and one-fourth inch behind the first one on the posterior aspect of the fundus. These stitches are tied tightly and the remaining wound in the abdomen is closed in the usual manner. The stitches in the abdominal wound are removed in eight days, while those holding the uterus are allowed to remain until the sixteenth day. The patient is preferably kept in bed for three weeks. It has not been my habit to use either tampon, pessary or abdominal support after the patient leaves her bed.

Some months after operation by this

method, the uterus will be found to be restrained from prolapsing into its former position, yet capable of considerable freedom of movement, rendering it probable that an artificial suspensory ligament of some length must have been formed by the stretching of the adhesions of the two opposed surfaces of peritoneum. It has never been my lot to have reopened a patient upon whom I have thus operated.

Celiohysteropexy is indicated whenever an adherent retrodisplaced womb cannot be relieved by non-operative treatment, such as packing and massage, and is attended by such symptoms as disordered and painful menstruation, backache, bearing-down pains, obstinate headache, loss of appetite, difficulty or pain in defecation, and various general reflex nervous symptoms, which are not relieved by persistent local treatment. Practically, this includes nearly all cases of adherent retroposed wombs. Unless the case be very acute when it comes into the hands of the physician, local treatment and massage will do little toward relieving the symptoms. Such women will require celiotomy to safely separate the womb from its adhesions, following which some means for its suspension must be devised to hold apart the denuded surfaces on the posterior face of the uterus and the posterior pelvic wall which corresponds to the adherent area. It is here that celiohysteropexy is indicated.

I do not believe that all non-adherent retrodisplaced wombs are productive of symptoms. Many wombs with relaxed broad ligaments and no peritonitic complications are found to be displaced posteriorly upon examination in the dorsal position, and would be found in anteposition if the patient were examined lying upon her abdomen. In such cases, frequently, the symptoms are dependent upon some other cause. A few of these cases may be relieved by a well-adapted pessary, which should be worn, if well tolerated, for months, with the hope that the ligamentary supports may regain their tonicity. Should they not do so after months of trial, celiohysteropexy is indicated, as I do not believe that any woman should be condemned to life-long use of a pessary. There is a class of neurasthenic women,

however, in whom pelvic symptoms are bitterly complained of and in whom a retrodisplacement may be found, which is purely accidental to a primary neurotic condition. Such women are made worse by operative measures and are a tax upon the judgment of the physician.

In some cases the relief to the backache and headache, which is frequently occipital or directly on the top of the head, is immediate. In other cases the improvement is gradual and may not be total for months. In none of my cases have I had troublesome bladder-symptoms resulting from pressure upon that organ.

For the relief of prolapse of the uterus in child-bearing women, celiohysteropexy affords a very important adjunct to the plastic operations for the narrowing of the vaginal caliber. After the uterus has been restored to the pelvic cavity, should the operator trust to narrowing the vagina alone, he will find that the uterus will in a relatively short time dilate its way and the prolapse return. This it does because the ligamentary supports have become overstretched and weakened, and the axis of the uterus coinciding with the axis of the vagina, intra-adominal pressure will urge it onward. Celiohysteropexy is then indicated as an adjunct to the plastic work upon the vagina in order that the axis of the uterus may be maintained at more or less of a right angle with that of the vagina, thus rendering descent impossible.

Usually in women with complete prolapse who have passed the menopause hysterectomy is the operation of choice. When this is for some reason undesirable, after the plastic operations upon the vagina, celiohysteropexy is preferably performed with buried sutures, providing for a more firm and reliable fixation.

In conclusion, I believe that celiohysteropexy, performed in the manner described, will produce an anteфлекed uterus with a large area of mobility; that if the plane to which the uterus may be safely raised is estimated, it will not be followed by dragging pains; that during pregnancy there will be little tendency to abort, and that the suspensory ligament will either stretch

or rupture during the enlargement of the uterus, so that no hindrance to delivery of the fetus will be encountered. I can recommend the operation for the relief

of those symptoms dependent upon the retrodisplacement of the womb and consider it in the hands of clean operators a safe operation.

HAY FEVER AND ITS COMPLICATIONS.*

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It has been comparatively recently that attention has been directed to this malady as an affection differing from ordinary coryza or influenza. Systems of medicine, published so late as 1878, only mentioned it incidentally in connection with asthma and bronchitis. To the sufferer it is such a compound of coryza, bronchitis, asthma and other unnamable things, as to entitle it to an individuality commanding our respect and compelling our unwilling submission.

Sneezing, paroxysmal in character and difficult to arrest, generally marks its incipency. A patient, a few days ago, told me she sneezed twenty-five times in close succession before stopping. This is followed by profuse watery secretion from the eyes and nostrils. The eyes are suffused and blood-shot, and the sufferer is compelled to breathe first through one nostril, then through the other, then use the nose for expiration and the mouth for inspiration, and finally resort to mouth-breathing altogether.

A tickling, irritable cough now manifests itself, with little secretion, except in the posterior nares, which secretion finds its way into the throat and has a peculiar sweetish taste. Of course, all this is accompanied by slight fever, occasioning a drying of the skin, particularly the palms of the hands and the bottoms of the feet. There is more or less general aching, the muscular soreness, perhaps, being greatest in the chest muscles, especial attention being directed to the sternum.

Digestion next suffers, and with the advent of difficult respiration and marked asthma, the tongue becomes heavily coated with a dense whitish fur.

Lying, except with the tongue, is now out of the question; hence, the patient is propped up, with the shoulders thrown well forward, and at night and during heavy, rainy weather, feels as if some one had cornered all the air in the world and was doling it out to him in gasps. There is always bronchitis where there are these asthmatic manifestations, but unlike the other mucous surfaces, that of the bronchi refuses to take on the humid condition unless compelled to.

Variously designated as hay fever, rose cold, hay asthma, it assumes the type of greatest severity when the asthmatic condition interferes with rest day and night, sends the blood, poorly oxygenated, from a heart that feebly pulsates 100 or 120 times a minute, and by the constant sense of suffocation and violent effort at respiration, debilitates to an extent only equaled by fever itself. The fever, though present early in the attack, soon ceases, and the skin, in the asthmatic variety, is generally moist and cool when dyspnea is greatest.

It is described as a neurosis associated with nasal hyperesthesia, and the hypothesis has been advanced that hypertrophies of the anterior tips of the inferior turbinated bones produce hay fever, while hypertrophy of the posterior tips are the essential factors of asthma; only, however, when there is special dyscrasia. The neurotic element is supposed to enter largely into it, and latterly its occurrence is attributed to an excess of uric acid in the blood.

This latter view is at variance with the theory largely entertained by nasal specialists who mainly hold to the hypothesis of a reflex neurosis, and cure by local measures applied to the regions of the turbinated bones.

Opinions agree as to the exciting

*Read before the Montgomery County Medical Society, September 16, 1896.

cause. Minute irritant particles from blooming plants and other sources are arrested in their progress lungward by the extensive mucous surfaces of the nares, there to become the specific irritant responsible for this distressing malady. Just what constitutes this irritant has not as yet been determined. My own opinion is that it is not the healthy pollen, but some fungoid growth as yet unrecognized. This conjecture would appear to be borne out by the fact that men who habitually follow the occupation of threshing grain, without suffering any ill effects, have repeatedly been compelled to seek my aid after threshing smutted or mouldy grain, especially oats.

Those who regard this trouble simply as a reflex neurosis devote their attention mainly to the nostrils, and almost invariably find some hypertrophy, deviation of the septum, spot of extra sensitiveness, or other mal-condition, to treat by an eight or ten per cent. solution of cocaine, followed by a ten per cent. solution of menthol in almond oil, or a ten per cent. solution of atropia; the menthol solution ten or twelve times a day; the atropia only once or twice. There is much less disposition to use the cocaine now than when it was first launched into the therapeutic arena as a specific. The special pathologic lesion is carefully sought for and treated by means of glacial acetic acid or the galvanic cautery. This, with bromides, quinine, and other nerve sedatives, are credited with many cures.

Turning to the lithemia as a causative agent we have a treatment consisting of careful attention to the diet, both before and during the attack, proper regard for sufficient exercise, and the maintenance of free biliary discharges. Medicinally, sodium salicylate, in doses of twenty to thirty grains each day, beginning, if possible, before the time of invasion, is highly extolled. Sodium phosphate freely administered, will also be extremely helpful in changing the character of the blood. Potassium iodid will also serve a good purpose in this condition.

Much has been written about the nasal trouble, and specialists invariably find some local affection upon which to concentrate their energies, but the

patients in after years tiring of this, or perhaps unable to leave their homes or their beds, pass through their accustomed attacks attended only by the family physician, notwithstanding the fact of their having been cured (?) by orificial surgery.

To the practitioner the nasal difficulty is much more amenable to treatment than the asthmatic condition. Who has not seen numbers of cases relieved of the nasal difficulty by antiseptic and other washes and yet suffer horribly from the asthma? My personal experience is that the coryza soon yields, and yet in certain conditions of the atmosphere I have left the lower floors of my home and gone to the upper stories in a vain attempt to find a comfortable breathing place.

The asthmatic complications being almost invariably accompanied by a dry bronchitis, cocaine must be used cautiously, for in this condition a further drying of the surface only aggravates the trouble. A hypodermatic injection of morphine at bedtime, either alone or with one-fourth to one-half grain of cocaine or $\frac{1}{100}$ grain of atropia will frequently give a good night's rest. I have tried terpin hydrate in doses of two or three grains every two hours during the day, and brought relief through the copious expectoration it produces. Recently I have used kola, on account of its reputed virtues as a general stimulant, particularly to the muscular and nervous systems, and the result has been satisfactory as far as tested. I have no knowledge of its use by anyone else for this disease, hence cannot give any corroborative testimony on this point, nor do I claim any specific action for it. At the same time I have given the nostrils attention by means of antiseptic borated washes containing thymol, menthol, eucalyptol, etc.

Complete relief has been obtained by some of my patients through sea voyages taken at the time when the attack was due; and others experience equal benefit by a residence at the seashore, even after the attack has begun. This is particularly so in some asthmatic ones whose nights have been almost unendurable at their homes, thus necessitating the trip.

The blooming of the clover bloom,

ragweed, and golden rod have been apparently the most prolific causes, as far as my observation goes, the first two being the occasion of semi-annual attacks in me personally. Saturday night last three young ladies from one house came into my office, all suffering severely from the earlier manifestations of this disease, and stated that the entire family were likewise affected. Inquiry elicited the fact that they had profusely decorated their home with golden rod, banks of it being placed in several open fire-places. The removal of it from the house has been followed by speedy relief.

Almost daily I am questioned by patients who remember my experience in former years as to the reason for my exemption this year, feeling certain that I must be using some remedial agent to ward it off. My explanation is that for a number of years past I have had manifestations of lithemia. My blood during the spring and summer months became surcharged with uric acid. Early in the

season urticaria would manifest itself after eating certain fruits and vegetables, such as strawberries and tomatoes. Muscular pains would become annoying, and the smaller joints of the hands and feet were at times quite painful and more or less stiffened, the hands and feet being hot and dry, especially at night. This year I ate fewer berries and have refrained entirely from the use of tomatoes and potatoes (white), except for a short time early in their season. I did not use the salicylates, but did use the phosphate of soda, also occasional doses of Rochelle salts. Whether these measures have had anything to do with it or not, I certainly have up to this time enjoyed an exemption not known for several years.

I have purposely avoided reference to the French physician who treats the asthma by rhythmically pulling the tongue; also to the visionary believer in the arsenites who gives arsenite of strychnia, gr. $\frac{1}{16}$, every two or three hours.

THE DANGER OF ARTIFICIAL EMACIATION.

Everyone has his normal weight, though circumstances may determine a more or less temporary increase or diminution thereof. A departure from the normal in either direction is incompatible with perfect health. This, of course, leaves in suspense the question as to what is one's normal weight, and those who are afflicted with what appears to the dispassionate observer to be a superfluity of adipose tissue usually resent the imputation that their obesity is other than an accidental and unavoidable circumstance. This point is easily settled by trying the effects of a carefully regulated but not over-strict regimen associated with daily exercise in the open air. All really superfluous tissue will disappear, although actual weight may not be palpably diminished, firm muscle taking the place of useless and burdensome fat. Obesity, however, is essentially a condition to be dealt with on an exclusively physiological basis. It is, of course, more or less amenable to medication, but the influ-

ence of drugs involves a brutal disturbance of the processes of nutrition, which cannot but be prejudicial to health. This is particularly the case in respect of the employment of thyroid gland in extract, which, in effectual doses, often entails symptoms of a very disquieting and even serious nature. It cannot be too strongly impressed upon practitioners that the thyroid treatment of obesity is one attended by a tangible amount of risk. In a German contemporary the case is recorded of a certain well-known dramatic artist, who sought to combat the opulence of form with which Nature had endowed him, and died in consequence. On ceasing to be obese—for the treatment was so far successful—he lost the placid temperament which previously characterized him, and became the prey of an unhappy irritability, consequent on an acute sensation of *malaise*; in short, he became nervous, impressionable, and as unrecognizable from a moral as from a physical point of view.—*Med. Press.*

1853-1896

THE MEDICAL AND SURGICAL REPORTER

ISSUED EVERY SATURDAY

THE BUTLER PUBLISHING COMPANY, Publishers

Editor and Manager

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Associate Business Manager

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Editorial and Publication Offices, 1026 Arch Street, Philadelphia, Pa.

P. O. BOX 843

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TERMS:—One year, three dollars in advance. Four months' trial, one dollar in advance. Subscriptions may begin at any date.

REMITTANCES should be made by Draft, Money Order or Registered Letter, payable to the order of the Butler Publishing Company.

COMMUNICATIONS for the Editor, and books for review, should be addressed to the Managing Editor of the MEDICAL AND SURGICAL REPORTER, 1026 Arch Street, Philadelphia.

BUSINESS COMMUNICATIONS, and letters referring to the publication, subscription or advertising department, should be addressed to the General Manager, P. O. Box 843, or 1026 Arch Street, Philadelphia.

CONTRIBUTIONS of value to the medical profession are invited from all sources. Original articles, contributed exclusively to the MEDICAL AND SURGICAL REPORTER, will be paid for at liberal rates, after publication (payments made quarterly), or a limited number of reprints will be furnished as the author may elect. Extra reprints will be supplied at cost rates to the journal. Orders for reprints must accompany MSS. To ensure the return of contributions not made use of, writers must enclose return postage.

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PHILADELPHIA, SATURDAY, OCTOBER 24, 1896.

EDITORIAL.

PROFESSIONAL ADVERTISING.

There lies before us a printed sheet of some five hundred words, in which a physician, apparently regularly graduated, advertises his hospital, his apparatus and his proficiency. As his advertisement comes from a distant city and is not addressed in care of THE REPORTER, it is fair to assume that many other physicians have been similarly favored. Thus, we feel that we violate no confidence in treating the circular as a published document and not as a personal communication. We are relieved to note that the physician from which this circular emanates is not a fellow-countryman, as witnessed by his

name, his style of writing and his explicit statement that he had attended lectures at no less than five foreign medical centres and had practiced abroad successfully for ten years before coming to America. The gentleman is a specialist, confining his practice *strictly* to two distinct branches. But he has a sort of specialty within one of these specialties, and within this inner specialty his skill is brought to a focus in the use of a particular apparatus for a certain lesion. The superiority of this form of apparatus over all others, the superior construction of the particular apparatus used by the doctor himself

and the superior skill with which it is applied and maintained, are all convincingly set forth in the circular. We are pleased to note, also, the doctor's modest delay in announcing his specialties and sub-specialties, his apparatus and his rates of treatment, till such time as he might "speak the United States language fluently enough to converse without difficulty." This naive statement ought to satisfy the most violent linguistic Jingo.

We can well imagine that a foreigner coming to this country, impressed in advance with the idea that every American is a "hustler," and wishing not only to keep up with his new colleagues, but to show his sympathy with American methods, may sometimes overshoot the mark. It is as difficult to learn the idioms of manners as of a language, while much depends on the personality of the offender. Not long ago, a foreigner was, for a time, denied admission to a medical society, on the ground that he displayed his specialty on his sign. We fail to see if a man may notify the world that he is a physician, why he may not also state what kind of patients he expects. The society referred to acted with peculiar inconsistency, since its president had for years announced his specialty on a sign.

Within a short time we have had occasion to contrast the methods by which three different men have announced their qualifications for using a recent medical discovery. All three have, doubtless, purchased approximately the same apparatus, at about the same cost and with the idea of receiving a profitable return for their investment. All have become, in a sense, advertisers; but note the difference in methods. A has sent no announcement to the profession but a fulsome notice of his apparatus, and its expensiveness has appeared in a daily paper. B has mailed

to physicians a circular letter, setting forth his claims in a thoroughly business-like manner, and embellished with an illustration in which Dr. B, readily recognizable, is excitably demonstrating "one of the many forms of apparatus at his disposal" to an interested spectator. C, making no formal announcement whatever, brought his apparatus before a medical society and exhibited it as part of the regular program. All things considered, we believe that the last has advertised himself most advantageously and in the most becoming manner.

It is said with much truth—we personally are quite willing to acknowledge the applicability—that the man who reads a paper or presents a case before a body of medical men, is advertising himself. But it is also true that the one who hangs out a sign or has his address and office hours printed on a card is advertising his profession. No man need be expected to hide his light under a bushel, but we may reasonably object if he places a reflector behind it and surrounds it with a gaudy-colored glass globe. Hard and fast rules cannot be laid down to distinguish the honorable and ambitious physician from the one who is just as near a quack as the law will allow him to be. We cannot say that the sign must be only so many inches wide, nor that the card shall be printed in just such type; that arbitrary rules shall control the appearance of an individual before his medical society and the public. Yet we recognize easily enough—and so do intelligent members of the laity—that certain men's signs and cards are advertising their bad taste as well as their profession; that some are prominent through a natural consequence of ability and industry; others through a vulgarity that verges on quackery.

A word of caution to the compara-

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tively inexperienced may be in order. Do not have a sign so large or so conspicuous that it seems to say to the passer-by: "Stop, I want you for a patient." Do not word your cards so elaborately that one may read between the lines: "I can't afford to lose a patient in any branch of practice, and I will stay in my office all day and ride all night rather than miss a dollar." The best clients prefer a man who is not too anxious for their patronage; they do not wish to invite into their homes, even on a professional errand, one who would rather lose his self-esteem than a patient. The class of practice which is secured simply through displaying a sign is not large, is not usually honest, and does not include many respectable

and desirable persons. It is better to let a few patients turn at your nearest corner in the direction of your rival than to have thousands of people who will sometimes need medical care laugh at a conspicuous sign placed on a city guide-post and bearing a hand pointing toward your office. Do not plaster your house with signs; do not announce on your cards that you are a specialist for the eye and ear, nose and throat, skin, surgery, and obstetrics; do not have so many office hours that people will wonder if you ever visit a patient or indulge in innocent recreation. In short, be a gentleman first, and a physician afterward, and do not disgust a possible patient by obtruding your profession upon his attention at every opportunity.

CORRESPONDENCE.

AN UNUSUAL MONSTROSITY.

EDITOR OF THE MEDICAL AND SURGICAL REPORTER:—

On October 9th, I was summoned to attend Mrs. M., who was five months pregnant, had pain in lower abdomen and profuse bleeding, which had begun several days previous.

Making a vaginal examination, I found the os contracted, and consequently advised perfect rest, administering viburnum prunifolium in drachm doses. Two hours later, I was summoned again. Upon my arrival, I found that the fetus and placenta had been passed. The placenta and membranes were intact. The patient being very sensitive, a most thorough examination was impossible, yet I believed everything to be in normal condition. The rapid dilatation I attributed at the time to some manual interference.

On the following day, I found the temperature of the patient 100 $\frac{1}{2}$, pulse 86. On the 11th, I found the patient resting easy, temperature 101 $\frac{1}{2}$, pulse

100. On the 12th, she was restless and had a temperature of 101 $\frac{1}{2}$, with pulse 96, which I believed to be due to engorged breast and constipation. I had the breast strapped and properly oiled and administered a saline. On the 13th, the temperature reached 103, with a pulse of 100. The discharge was bloody, quite thick and of a somewhat fetid odor, and I determined that an intra-uterine douche should be given, and if the conditions were not relieved, curettement should be resorted to during the course of the day.

During the day, the patient suddenly passed an object which greatly shocked her, and I was summoned in haste. At first I believed it to be a clot, but upon closer examination it was evident that it was another fetus, deformed. It consists wholly of a bony head without a body, tapering and resembling a mouse or a fox. It is two inches long and an inch in diameter at its greatest thickness, the eyes and mouth not well marked.

There is a fuzzy coat, resembling hair, at the top and thickest portion.

Subsequently the temperature dropped and the patient is now convalescing.

I account for the presence of the monstrosity, which I have been fortunate enough to obtain, by the impregnation

of a secondary ovum. Should it have reached its full term, it would come under the class of ectomelic monstrosities, or those not having a body or extremities.

J. MISHKIN, M.D.

PHILADELPHIA, October 20, 1896.

ABSTRACTS.

THE BLOOD IN CHOREA.*

CHARLES W. BURR, M.D.,† PHILADELPHIA.

The blood of thirty-six cases of Sydenham's chorea, treated in the clinics of Drs. Weir Mitchell, Sinkler and Lewis, at the Infirmary for Nervous Diseases, was examined by Dr. James Ely Talley. In each case the hemoglobin was estimated and the red corpuscles counted. No count was made of the white corpuscles. The hemoglobin and the corpuscles were at the theoretic normal in only two cases. In none was the anemia extreme. In the most severe case, the hemoglobin-estimation was forty-five per cent., and the number of red corpuscles 3,450,000. The chorea was slight and the patient had serious heart-disease, to which the anemia was referred. In another case, complicated by epilepsy, the hemoglobin-estimation was sixty per cent., and the number of red corpuscles 3,600,000. In one very bad, uncomplicated case, the hemoglobin-estimation was sixty-five per cent. and the number of red corpuscles 4,800,000, and in another the hemoglobin-estimation was sixty per cent. and the number of red corpuscles 3,850,000. These were the most anemic cases. In twenty-four, the hemoglobin-estimation reached eighty per cent. or over, and the number of corpuscles 4,000,000 or more. In twenty-nine the hemoglobin-estimation reached seventy-five per cent. or over.

The conclusion was reached that the blood is rarely absolutely normal during

an attack of chorea. There is usually a moderate diminution in the hemoglobin and a relatively still smaller decrease in the number of red corpuscles. The anemia is, therefore, chlorotic in type. There is no relation between the severity of the chorea and the severity of the anemia. When the anemia is severe, there is usually some complication competent to explain it. The belief was expressed that anemia is not an immediate, direct, exciting cause of chorea, and but infrequently a predisposing cause. In the great mass of choreas, the anemia is the result of the chorea—is secondary. In the rare cases of chorea, which seem to be caused by mycotic infection, the anemia may be toxic.

"Is there any particular nervous complaint connected with your profession?" asked the cheerful idiot of the rifleman. "There is the tennis arm, the bicycle face, and the baseball arm, and I thought there might be something of the sort among you gunners."

"No," said the rifleman; "nothing of the sort."

"It is very queer," said the cheerful idiot thoughtfully. "I didn't suppose you could hit the target without taking sharpshooting pains."—*Indianapolis Journal*.

A shoemaker had this card in his window: "Any respectable man, woman or child can have a fit in this shop."—*News*.

*Abstract of article read before the Philadelphia County Medical Society, October 14, 1896.

†Clinical Professor of Nervous Diseases in the Medico-Chirurgical College, Philadelphia.

MEDICINAL TREATMENT OF INTESTINAL CATARRHS IN INFANTS.*

In most cases occurring in infants simple dietetic treatment is sufficient to remove even severe affections of the intestines and dyspepsias, though in all cases medicinal treatment is not to be ignored. The medicines worthy of our notice are, in the first place, muriatic acid and pepsin or papain which tend to establish a better digestion, thus preserving the intestine from irritation and promoting recovery. An excellent remedy, which acts as an antiseptic to the whole digestive tract, as well as a weak astringent, is resorcin, in doses of 0.01-0.3 gm. (Resorcin 0.2-6:100, in teaspoonful doses). Where the intestinal disease is, however, of longer duration, or the weakness of the patient is an indication for a more rapid assimilation of nourishment, we must fall back upon a drug which exerts a wide local influence on the intestinal canal. In such cases the salts of bismuth and tannin are most important remedies. The salts of bismuth have an excellent temporary action, and are of great value in catarrhal inflammation of the intestine.

Bismuth salicylate 0.5 gm. three times a day may be given to infants; these preparations do not exert any long-continued effect, however, so that in more chronic cases, their administration must be continued for quite a long time, and relapses are likely to occur when they are discontinued.

The most energetic remedy in this respect, however, is tannic acid which is best given pure, in a one-half to one per cent. solution of some corrigit. Of less service are the tinctures containing tannic or gallic acid, as tincture rhataniæ, catechu, etc., so also the much used and abused Russian tea. Decoction of lig. campech. has much less power than tannic acid, but has the advantage of not affecting the appetite, and being nearly always well borne. Tannin, cotoin, and tinct. of coto. are pure styptic remedies. Opium should not be used in the systematic treatment of the intestinal disorders of infants, at

least it is not a remedy which should play a prominent rôle in these cases.

During late years tannin therefore has again gained a prominent place in the therapeutics of intestinal catarrh. If we have to deal with comparatively, light affections, where with one day's fasting, followed by a strictly milk diet for two to three days, and the simultaneous administration of tannin the diarrhea can be checked, this remedy is sufficient for our demands. When, however, it is necessary to continue the drug for any length of time, it will be observed, that although the diarrhea ceases, the child's general condition and weight do not improve. The reason for this is that the tannin, as far as it is active in the stomach, forms with the albumin a combination which is not very soluble, and does not exert much action in the intestine, besides curtailing to some extent the secretion of the gastric mucous membrane. We are, therefore, compelled, where the disease is of long standing, after giving the tannic acid for two to three days, to substitute muriatic acid, returning again to tannin, or some preparation containing it after a few days, thus losing time before a cure is obtained.

For these reasons the discovery of an acetyl-combination of tannic acid by H. Meyer, which is not decomposed in the acid secretions of the stomach, but only in contact with the alkaline fluids of the intestinal tract, has been an important addition to our pharmacopeia.

This preparation only becomes active when the tannic acid is liberated by the splitting of the acetyl-groups. This occurs only in a very small degree in the mouth, through the action of the saliva, which can be proved by allowing a quantity to remain in the mouth for some time, when the astringent taste of tannic acid is gradually perceived.

However, the quantity which is decomposed by the saliva forms only a fraction of a milligram, which cannot produce any disturbance of the stomach. In the stomach itself the drug is insoluble if no abnormal fermentation process is present, which produces an acid re-

*Dr. A. Hock, of Vienna, in Wiener Medizinische Blätter, No. 30, 1896.

action. The splitting up of the preparation takes place in the intestine under the influence of the alkaline intestinal secretions, and reasoning by analogy we may assume that the more intense the action of bacterial agents in the intestines the greater the extent of the decomposition of the drug, so that the effect is strongest where most necessary. During normal digestion and rapid peristalsis, the greater part of the drug probably passes through the intestines unchanged, particularly if large doses are given, thus explaining the safety of large doses; while other tannic acid preparations, as is well known, are not always free from objection, as they have a tendency to produce enteritis membranacea.

The different authors who have used this remedy—Kunkel, Drews, Biedert, Escherich, Bachus, Hewitt and others—have all expressed themselves in terms of praise, and I can only do the same.

As regards the dose of the remedy, I have given it in very young children (up to five months of age) in doses of 0.1 Gm., in older ones in 0.2 Gm. doses, and have found this sufficient. On account of the preceding theoretical considerations, I have ordered the remedy after meals, at first usually six times a day, later four times daily.

R

Tannigen 2.0
Sacch. lact. 3.0

Divid. in chart No. X.

Sig. : One-half powder every four hours.

(Children above one year of age a whole powder.)

In some cases I have combined it with muriatic acid.

The action is very prompt; a diminution in the number of stools occurred within twenty-four hours. The admixture of mucus disappeared generally on the third day, and the number of stools decreased about the same time to one or two in twenty-four hours.

The following cases have been treated by me:

1. Joseph Willert, ten months old, artificially fed, has six to eight mucus stools a day. Was cured after three days' treatment.

2. Alois Machots, eleven months old, artificially fed, rhachitic, has three to

four passages daily. After using tannigen for three days, only one passage daily. Was ordered cod-liver oil with phosphorus.

3. Marie Schipel, twenty months of age, had a diarrhea for two weeks, following an error in diet. After taking tannigen for three days, in doses of 0.8 Gm. a day, stools reduced to one daily. On discontinuing the remedy, diarrhea reappeared, which disappeared, however, after taking 2.0 Gm. more of tannigen.

4. Josefa Fuchs, child at the breast, suffers with bronchitis, diarrhea, numerous green passages; after administration of 2.0 Gm. tannigen, cured; the bronchitis also has improved.

5. Gyula Linder, three months old, artificially fed, numerous green stools, containing much mucus; cured after three days' treatment.

6. William Strond, seven weeks old, cured in three days.

7. Victoria Holly, eight months old, a rhachitic child, numerous discolored stools with much mucus; after three days, only two stools a day. Cod-liver oil and phosphorus ordered.

8. Franz Watzl, three years old, was dismissed cured after five days' treatment.

9. Fanny Halloki, seven months old, suffering with intestinal catarrh for two weeks. General appearance, bad; numerous stools (mucus); temperature, 38°. Time of treatment, nine days; after that, normal stools.

10. Franz Lonecky, nine months old, was cured after four days' treatment.

11. Marie Schwarz, seven months old. Vomiting and numerous green stools. Acid muriat., 1.0:100 and tannigen. After six days, vomiting ceased and stools were reduced to one or two a day.

There were treated altogether fifteen children (twelve under two years of age) for intestinal catarrh; the duration of treatment was three days on the average; in one case it was seven days; sometimes improvement in the stools took place within two days. To rhachitic patients, with a tendency to diarrheal stools, tannigen was given before the usual treatment with cod-liver oil and phosphorus; and in every case with good results. In four cases of influenza

with gastro-intestinal symptoms in older children (three to five years of age) salicylate of bismuth acted decidedly superior to tannigen; but in cases of intestinal catarrh, following a pneumonia, tannigen did very good service.

In the diarrhea of tuberculosis it proved very beneficial for the time being, as Escherich has also observed.

The diet, it should be remarked, was the same in all cases. Young children were given milk, and a 7 per cent. solution of sugar of milk in equal parts. Children over eight months of age received undiluted milk and no other food, with strict directions as to the time of feeding.

According to my experience, the course of the cases treated by tannigen was decidedly shorter than under the expectant treatment alone, or that with resorcin. Tannin also materially shortens the duration of the disease.

In acute dyspepsia, muriatic acid and dieting are the sovereign remedies,

sometimes in connection with washing out of the stomach.

It goes without saying that the children should receive their nourishment sterilized. Careful cleansing of the bottles with *sapo viridis*, as Heuser recommends, and a careful boiling of the sugar of milk solution is not to be omitted. The intervals between meals should be about three hours; and successful results will usually be obtained even when the Soxhlet method cannot be used.

If vomiting is absent, and the stools contain only a small amount of undigested material, tannigen may be administered at once; otherwise it is advisable to precede its administration by abstinence for one day (muriatic acid and soda water being allowed as drinks). As already mentioned, the remedy exerts no disturbing effect upon the stomach; so that, even where there is a tendency to nausea, it is usually retained.

CASE OF EXTRA-UTERINE PREGNANCY WITH FETUS RETAINED FOR SEVEN YEARS.*

Mrs. R., aged twenty-eight years, was married nine years ago, then a robust, healthy girl, weighing 133 pounds. In about a year after marriage, she became pregnant and moved along about as the average pregnant woman until, what she thought, the end of the eighth month, when she was taken with pains in her back and bowels. She sent for a physician, who found her suffering from what appeared to be normal labor pains; her size and other appearances indicated pregnancy at or nearly full term. She was in labor for two days, when the pains suddenly ceased and the abdomen became somewhat less in size.

She was quite ill for five or six weeks, but recovered fairly good health and resumed her usual household duties, but there remained quite a bulky lump in the abdominal cavity. This condition lasted for seven years, when she became seriously ill with acute peritonitis, from which she appeared to get better, but not entirely well.

On July 2d, she became worse and was in a very critical condition, with colliquative diarrhea, and so much emaciated that the skin appeared to adhere to the bones. Pulse 140 and very feeble; no appetite and unable to sleep. I found a large, irregular protruberance in the right inguinal region; after eliciting the above history, I pronounced it the remains of a fetus. She remained in this condition until the morning of July 14th, when she died.

On the evening of the same day, in the presence of other physicians, I opened her abdomen and found nearly all of the contents of the cavity in an offensive, gangrenous condition. I also found the remains of a ruptured cyst, which had contained the bones which I now present for your inspection. They appear to be the decomposed bones of a full-term child.

The uterus and left ovary were normal. I could find no trace of the right ovary or tube, which would indicate that this had been an extra-uterine conception.

*J. A. Patterson, M.D., in *Pittsburg Medical Review*.

My reasons for bringing this case to your attention, are: The rarity of such cases; the age of the fetus before the cyst gave way, and the recovery and good health for more than seven years. She probably would have lived for a longer period if acute peritonitis had

not set in, perhaps from some other cause, for she had been working hard and lifting heavy weights.

I believe this would have been a very encouraging case for operation, if the condition had been recognized and consent could have been obtained.

SOCIETY REPORTS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, October 14, 1896.

The President, DR. J. C. WILSON, in the chair.

DR. F. W. TALLEY read a paper upon

THE PROPER POSITION OF CELIOHYSTEROPEXY IN GYNECOLOGY.

[See page 525].

DISCUSSION.

DR. CHARLES P. NOBLE said that, a short time ago, he collected from American operators over 800 cases of hysteropexy and studied the results which were secured. He had, himself, operated about seventy-five times and enough other cases had been operated on by Alexander's operation to make his experience cover about 100 cases. Dr. Noble has not observed pain after suspension of the uterus, and he believed it to be a comparatively infrequent symptom. Every surgeon has been unfortunate enough to have operated upon hysterical cases at times and upon neurasthenic cases in which it is sometimes difficult to determine the cause of symptoms present, but these are not to be included.

In the 800 cases studied there was absolutely no evidence that the operation favors abortion. The same was true of a larger series of cases collected from foreign medical journals. The whole series covered over 1500 cases altogether and in the whole number there was no evidence whatever that the operation favored abortion, so that in the absence of direct evidence this objection must be considered theoretic and without foundation.

The third objection, of dystocia, undoubtedly has a basis, and difficulty has arisen from too firm fixation between uterus and abdominal wall. The question is one of fixation and not of suture, because dystocia has been just as frequent when there was no buried suture as when buried sutures were used. In one of the American cases in which extreme difficulty was encountered in subsequent labor, there was suppuration after the operation of suspensio uteri; a large surface of adhesions was left and when pregnancy took place a tumor formed, obstructing the inlet of the pelvis. Dr.

Noble had personal knowledge of two other cases, and in these, buried sutures were used.

If a technic is adopted that will attach the uterus to the abdominal wall lightly, dystocia will not occur, or but very rarely. As a matter of fact the percentage of difficult labor has been two per cent. in the series of American cases, (that is *serious* difficulty not to be relieved by the ordinary resources of obstetrics)—a comparatively small percentage when the suffering that the operation is intended to relieve is considered.

Dr. Noble referred to one operator with whose results he is familiar, who made use of the through-and-through suture described. This operator also scarified the uterus. The result in his cases is that adhesions are so extensive that he is no longer as ardent an advocate of the operation as he was some time ago. The use of a through-and-through suture must favor the formation of more extensive union than if the buried suture is used, for the reason that the former draws the abdominal wall down tightly against the uterus and holds it there whatever number of days the stitches are left in, keeping a large surface of the uterus in contact with the abdominal wall and in that way insuring a large surface of attachment. On the other hand, if the peritoneum is lightly attached to the uterus the intra-abdominal pressure immediately after the operation tends to drag the uterus from the abdominal wall and in that way to form a light abdominal attachment.

Dr. Noble said that he is sufficiently conservative to find use for the pessary. A pessary is all that is called for in a small percentage of movable retrodisplacements. This is especially true in recent cases and puerperal cases when the uterus is large and heavy and involution has not taken place. Many cases recover under this method of treatment. All that is necessary is a certain amount of patience until good results are obtained. Very few patients with retrodisplacements of non-puerperal origin are cured, but many can wear a pessary comfortably. For movable displacements, if operation is necessary, Dr. Noble prefers Alexander's operation of shortening the round

ligament. This is better than the suspension operation because it gives a result that more nearly approximates the normal condition and is not any more dangerous than a suspension, if as dangerous. Dr. Noble has used both methods and judging from his own results he prefers the Alexander operation in this class of cases.

DR. E. E. MONTGOMERY said that the subject is an exceedingly interesting and important one. It is important from the influence that fixation is likely to have upon subsequent gestation and parturition. There is no question whatever, but that the method of treatment is capable of giving relief to women who would otherwise be victims of disease and distress, who have possibly spent years of suffering before the operation was done, and would be condemned to lives of invalidism were it not done. In view of the possibility, however, of trouble existing during subsequent parturition, it seems wise that the advisability of other methods of securing the same object should be considered. The cause of trouble is partly due to the pain and distress during the progress of gestation, and to thinning of the posterior wall of the uterus during the development of the organ, which renders pains or contractions subsequently irregular and necessarily increases the danger of rupture of the uterus. The method suggested of fixing the uterus would seem to result in either too firm or too slight union of the uterus and the abdomen. If the union is not firm, the removal of the sutures will be followed by separation and the uterus will drop back, with redevelopment of the old condition.

In patients who are likely to become pregnant subsequently, it would seem to be a better plan of procedure to do the operation of shortening the round ligaments within the peritoneal cavity, as suggested by Mann. The uterus is thus swung in the pelvis, remaining perfectly movable, while at the same time it is brought forward. The organ is thus kept in place without the probability of trouble during gestation. In those who are not likely to become pregnant, the operation of ventrofixation may be done, as it can be performed more quickly. Dr. Montgomery referred to a patient who underwent the operation of fixation at the hands of a surgeon who uses a buried suture, and introduced the suture only between the peritoneum and fundus of the uterus. This patient has complained of a good deal of distress during gestation, from dragging upon the abdominal scar. She has reached the sixth month of gestation and is threatened with abortion. The latter is not due, however, to the fixation operation, but rather to having been run down by a bicycle. Upon examination of this patient, the finger could readily be passed through the cervix into the uterus and presented evidence of some flexion of the anterior wall of the organ, while the posterior wall was shortened and smooth, showing, if anything, that the dilatation of

the uterus has been accomplished to some degree at the expense of its posterior rather than its anterior surface.

DR. JOHN C. DACOSTA said that he had performed quite a number of suspensions of the uterus, and had had the privilege of examining some of the cases months after the operation. The patients in whom he had noticed pain were hysterical or very nervous women. This pain generally did not last more than a day or two. There were two cases in which it was accompanied by a little depression of the skin at the side where the sutures were put in, and which apparently pulled on the abdominal wall. In these cases difficulty in labor depends entirely upon the technic of the operation, and if through-and-through silkworm-gut sutures through the abdominal wall are used, and left for sixteen days, there is danger of dystocia. If the uterus is fixed firmly to the abdominal wall so that it cannot yield at all, irritation at least will result. Inflammation may be set up, as firm adhesion between the muscles of the uterus and muscles of the abdomen may take place as in a cut of any other part of the body. The trouble in these cases, and in the very two per cent. Dr. Noble speaks of, is due to the operation having been done with through-and-through silkworm-gut sutures and to firm adhesions.

The technic of the operation has a great deal to do with the success or non-success. Dr. Kelly, in his last modification of ventrosuspension of the uterus, produces fixation by putting the sutures near the fundus of the uterus a little below the top of the posterior wall. Now, if, in introducing the sutures, not more than an eighth of an inch of peritoneum and fascia of the abdomen be included, and not more than from three-eighths to half an inch of uterus, not going more than a sixteenth of an inch into the uterus, and not using a heavy suture that will remain intact in the abdomen, but as light silk or catgut as will carry the uterus, putting the first stitch in the top of the uterus, very good results will be secured without the risk pertaining to the through-and-through silkworm-gut suture.

Dr. DaCosta referred to a case seen more than a year after operation, in which the retroflexion was so great that the fundus of the uterus was back against the cervix. Examination showed that the posterior wall at the internal os was thinned out to not more than once or at any rate twice the thickness of blotting-paper. A cystic ovary was removed, and suspension of the uterus was effected with very fine silk, including but little of the uterine tissue. At a later operation for omental adhesions by another surgeon the silk stitches were found to have disappeared, while the uterus was suspended by a long semi-serous cord, two inches in length, the viscus itself normal in position, perfectly movable, and its posterior wall, which had been so attenuated, had become normal in size. The uterus was perfectly able to carry itself and no

longer required suspension. When such a condition exists there is nothing to prevent pregnancy or to interfere with parturition. A ligament of that kind, which will stretch that much in so short a time, cannot offer any obstacle to labor. In the case of another woman similarly operated upon, and five months later opened on account of tuberculous peritonitis, the same favorable condition of affairs existed. In Dr. DaCosta's experience these uteri do not drop back after the operation. The ligament is sufficient to hold them up and keep them from dropping back, and a very slight suspension does it. The uterus, being kept in proper position, is afforded the proper amount of nutrition, while the blood is able to get to it and it becomes normal in character. In some cases there is a little depression, which disappears at the end of three or four days, as if elongation had already taken place and semi-serous attachments were forming. If the uterus be pitched forward and stitches put through its back, pain is more likely to be present, as the uterus is not placed in a normal position, but an antedisplacement is produced.

DR. J. C. MORRIS said that he had no experience with the operation of hysteropexy. He had relieved with pessaries such cases as came to hand; more especially retroflexions, almost without exception, had been relieved by intrauterine steam-pessaries properly supported. For that reason he had never felt justified in subjecting patients to the other risks. Placing the uterus in position allows of normal nutrition taking place in the organ and relieves congestion, which is otherwise always present. If stimulation is desired in order to secure a more rapid result, a galvanic pessary, composed of zinc and copper, will frequently yield excellent results. Through these means many enlargements of the uterus have decreased, so that shorter and shorter uterine stems are required until the normal size is reached. In married women normal pregnancy has followed this treatment.

With such results, while not as brilliant as those obtained from operation and requiring a great deal of patience and perseverance, there seems no occasion to resort to surgical means.

DR. A. O. J. KELLY read a paper upon
ESSENTIAL PAROXYSMAL TACHYCARDIA,
WITH THE REPORT OF FOUR CASES.

[See page 513.]

DISCUSSION.

DR. A. A. ESHNER related that in a considerable number of cases of vaso-motor ataxia in which he had examined the urine for Dr. S. S. Cohen, in some of which there had been rapidity of action of the heart, erythrocytes in varying number were found in a not very small proportion. The simplest explanation of the fact is that the relaxation of the renal vessels from diminished vaso-motor tonus permits of the escape of individual red corpuscles.

DR. S. SOLIS-COHEN said that the cases to which Dr. Eshner referred did not number among them any that would fall under the definition of essential tachycardia in the sense that all other pathologic phenomena were absent from the complexus. He could not agree with the nosologic scheme that would sharply separate cases such as those reported from all other cases of cardiac and vaso-motor disturbance.

When there exists a large group of pathologic phenomena comprising cases that shade into one another imperceptibly, it seems a philosophic blunder to draw a sharp line at any one point arbitrarily chosen, saying cases on this side belong in one group, and cases on that side in another. This rather narrows our conception of the fundamental pathologic factors; whereas, if we include in our study all the cases—just as we would include in our study of zoology all the different varieties of a species, or all the different species of a genus—we are the more likely to arrive at a satisfactory conception of the causative mechanism. In other words, tachycardia is to be looked upon not as a disease, but as a symptom, just as glycosuria, albuminuria, asthma, and other phenomena formerly considered diseases are now looked upon as but symptoms.

Dr. Kelly's adaptation of the theory of the motility of the neuron to these cases is certainly ingenious, but the question at once comes up, Why is the contact of the arborescent extremities of the neurons interfered with? In the cases of vaso-motor disturbance studied by Dr. Cohen there seemed to be several exciting causes of the interference with vaso-motor and cardiac tone. This loss of tone was called *ataxia* because it is not a paresis, and, though aggravated paroxysmally, it is not a spasm; it is not an overstimulation, it is not an understimulation; it is simply an irregularity. Less is assumed in terming it an *ataxia* than by using any other term.

In some, over-exertion was the exciting cause; in some, emotion; in some, change of temperature; but in the majority of instances it was poisoning of some kind; in some cases, poisoning by drugs, in other cases, poisoning by food, in other cases, poisoning by failure of function, intestinal or renal or thyroid, or other similar condition. We have thus advanced one step further if we say that the paroxysm is usually a toxic manifestation; the toxins being many in number and various in character. These interfering with the function of the neuron, then the other conditions may occur. We must, however, go still further, and assume, as the condition rendering patients susceptible to this result of intoxication, a fundamental fault in the physical, chemic, or vital constitution of the nervous centers of visceral life, a failure of development that may be congenital, indeed hereditary, as it was in many of Dr. Cohen's cases, or similarly faulty constitution acquired as the result of various depressing influences, perhaps infectious disease, as in Dr. Kelly's

case following influenza. The interference with the nutrition and with the further development of the nerves and ganglionic centers owing to the profoundly depressant effect of the poison of influenza was in that case equivalent to what would have occurred in some other cases through hereditary failure of development.

It is true that we have not yet reached the ultimate cause, but if we can go but these two steps further toward it we shall be better able to diagnosticate and to treat cases, and better able to formulate a prognosis in the individual case.

Dr. Cohen gave an account of a patient presenting a most marked case of vaso-motor ataxia. For six months he had been without any of the paroxysms to which he had been subject before coming under treatment, and he attributed the recurrence of the paroxysm to ale-drinking, which had shortly preceded it. This conclusion seemed justified, as errors in diet, drink, or venery usually preceded the paroxysms. The attack begins with blurring of vision, one-sided headache, as in ordinary migraine, but it then goes on to violent tachycardia, following which comes numbness of one upper extremity—always that opposite to the side of the head which is affected. The patient's mother had goiter; he himself presented moderate enlargement of the thyroid gland, and was benefited by the use of thyroid extract in very small doses. This patient has been relieved in all of his paroxysms by taking nitroglycerin. In the attack which he reported, he took ten drops of the spirit of glonoin, with relief in two hours; whereas, before treatment the condition required several days for complete relief. In this case the phenomena, as shown by facial pallor, are not those of paresis, but of over-constriction of the vessels, and nevertheless it is attended with tachycardia. In a case of paroxysmal tachycardia, observed by Dr. Cohen, the tachycardiac attacks seemed to alternate with ordinary paroxysms of epilepsy, and sometimes flushing of the face and tachycardia preceded or accompanied the convulsions. Dr. Wood has advanced the idea that there is a very intimate relationship between tachycardia and epilepsy, suggesting that tachycardia might really be called an epilepsy of the heart; but the paroxysm and its provocative cause must be separated in study from the underlying susceptibility to such cause and such reaction before useful conclusions as to the true character of either can be reached.

DR. WHARTON SINKLER said that the occurrence of tachycardia in neurasthenics is so common that we cannot help associating the conditions which bring about neurasthenia with the attacks of tachycardia. The excessive heart-action is one of the most annoying symptoms in neurasthenics, and one of the most difficult to overcome. The theory of the motility of the neuron, while very attractive and plausible, is not based upon any firm foundation, and is purely speculative. There is

no question that the neuron is an entity, and that disturbances in its function bring about disturbances throughout the nervous system.

It seems that the cause of disturbance which takes place is rather one of mal-nutrition than toxic, because neurasthenia is essentially a condition brought about by malnutrition, and improvement in the nutrition of the patient removes the neurasthenic state and along with that the attacks of tachycardia.

DR. J. P. CROZER GRIFFITH said that a survey of the subject had more and more impressed him with the impossibility of drawing sharp lines between so-called essential tachycardia and tachycardia from other causes. In many other affections it has become necessary to limit the use of the word "essential" very largely; for instance what was formerly called "essential anemia" we now attribute to a number of causes. The same facts apply to "essential epilepsy." Experiments of recent years have demonstrated distinct organic affections in many cases which for want of a better term were spoken of as "essential."

Attacks of essential tachycardia are simply those in which an originating influence cannot be found. The reflex tachycardias are naturally functional in origin.

Tachycardia is of frequent occurrence at the menopause, in conjunction with other disturbances. Dr. Griffith related the case of a woman in whom following a dislocation of the shoulder the heart remained for several weeks excessively rapid, with the pulse at 150, but curiously enough without any subjective symptom whatever, aside from palpitation. Absolutely no organic cause for the condition was to be found, and the heart was perfectly normal.

Another case would have been classed at one time as essential tachycardia and at another as arrhythmia, which would suggest the existence of organic trouble, probably myocarditis.

THE PRESIDENT said that he had recently seen two cases of so-called essential tachycardia. One occurred in a man who had endured great hardships in consequence of shipwreck. The other was in an elderly lady who had broken down after a prolonged period of anxiety due to the illness of her only daughter, followed by serious pecuniary loss. Both cases presented in a typical manner the phenomena of essential tachycardia. There were, in both, intervals of prolonged relief from cardiac symptoms, with paroxysms occurring with great suddenness and usually without obvious immediate cause. Dr. Wilson coincides in the view that even so-called essential tachycardia must be looked upon as symptomatic, as it is often associated with conditions of malnutrition which, for want of a better term, are classed under neurasthenia.

DR. T. J. MAYS expressed the conviction that some cases of tachycardia will show organic changes in some portion of the nervous system. Cases of essential paroxysmal tachycardia are always puzzling because they do not

harmonize with views gained from physiology. He concurred in the view that often in these cases the accelerator nerves are concerned, while the vagus or the medulla oblongata is involved principally.

The literature contains a number of cases in which pressure by an enlarged tumor or gland upon the vagus produced tachycardia, showing that knowledge of the normal inhibitory power of the vagus does not harmonize with pathologic knowledge of this condition. If it did then the heart's action would be slow instead of accelerated in these cases. The possible explanation offers itself, however, in this connection, that the pressure on the vagus may paralyze its inhibitory power, and that the heart's action is more dominated by the accelerator nerves. The belief was expressed that the condition of paroxysmal tachycardia is associated with many abnormal conditions, and that it is always a condition of depression. Dr. Mays has found it associated with angina pectoris and believed that it is a spasmodic disease and has a close alliance with epilepsy and probably with asthma too. Furthermore, he has found it in cases of lead-poisoning. It is also found in alcoholic poisoning and also in syphilis, and possibly in some metallic toxic conditions.

No one plan of therapeutics is adapted for the condition, which requires a varied application of remedies. In one case of angina pectoris, associated with the attacks, applications of ice to the neck proved very effective.

Most cases are benefited by strychnin together with general supportive treatment, including nourishing food, and, if well-borne, cod-liver oil. To give these patients the best therapeutic results it is necessary to operate through the whole nervous system.

DR. A. O. J. KELLY agreed that taking any series of cases as they present themselves, tachycardia included, it is absolutely impossible to arrange them all in any exact nosologic order. Nevertheless, it is quite true that the cases reported, especially the first two, are instances of what may be properly designated essential paroxysmal tachycardia, according to the definition given at the beginning of the paper.

There are many cases in which the ultimate principles occasioning the tachycardiac symptoms are toxic. These cases may be designated symptomatic or reflex; some of them are alcoholic. It is interesting in this connection to note that Déjérine, in some such cases, has demonstrated, after death, degeneration of some of the fibers of the vagus. In elaborating the theory of the motility of the neuron it is admitted that the ultimate principle might be in many instances nutritional.

The best treatment may be termed symptomatic, and it is well to remember that numerous paroxysms may be terminated by stimulation of the vagus in the neck, and by such procedures as drinking a cup of cold water or hot coffee. An ice-bag to the precordium or a cold douche to the chest or neck may be adequate.

Under certain circumstances the injection of morphin is followed by good results, but certainly in minor paroxysms of tachycardia this drug is not indicated. In prolonged attacks it has been given with asserted good results. In other cases digitalis has been given and the attacks have ceased. The result, however, cannot always be ascribed to the medication employed.

DR. C. W. BURR read a paper on

THE RELATION OF ANEMIA TO CHOREA.

[See page 534.]

DISCUSSION.

DR. WHARTON SINKLER agreed with all that Dr. Burr had said. It is the popular impression—that which prevails among the medical profession at large—that anemia is a predisposing cause of chorea. The Collective Investigation Committee of the British Medical Association a few years ago collected 432 cases of chorea and found that ninety-two of these were anemic. Dr. Rachford, of Cincinnati, considers that chorea is due to what he calls a scrofulous anemia, and says that it is directly curable by iron iodid.

From his own experience, Dr. Sinkler does not think that in Philadelphia, or at least among the patients who come to the Infirmary for Nervous Diseases, choreic children as a rule look anemic. A scrutiny of the books at the Infirmary shows that of forty-six cases in which a blood-count was made—probably including those studied by Dr. Burr—the average number of corpuscles was 4,825,000 to the cubic millimeter; in seven cases the number of corpuscles amounted to 6,000,000 and over; in ten, between 5,000,000 and 6,000,000; and in sixteen between 4,500,000 and 5,000,000. The hemoglobin-estimations were practically normal—that is, out of forty-seven cases in which an examination was made as to the percentage of hemoglobin there was an average of 79.4 per cent. The lowest blood-count was 2,800,000; the highest, 6,500,000. In twelve cases the hemoglobin was estimated at over 90 per cent. These results are about as good as would be expected in an equal number of healthy children. They bear out the assertion that anemia does not predispose to chorea.

DR. ALFRED STENGEL said that his experience in the examination of the blood in cases of chorea is limited to about a dozen cases. In these the average blood-count was between 4,000,000 and 5,000,000, and on the average, the hemoglobin was about equally reduced. In no case was there marked anemia. In a few cases there was a moderate leukocytosis. Altogether, the conclusion seems justified that anemia is not a frequent complication of chorea, much less a cause of the disease.

The interesting fact, however, to be considered is that many cases of chorea present an anemic appearance. This has led to the general belief that chorea is associated with anemia and is probably dependent upon it.

An anemic appearance, however, is by no means always an indication of actual anemia. In a recent paper on chlorosis, by Dr. Townsend, of Boston, allusion is made to the unreliability of pallor of the skin or mucous membranes as a sign of reduction of hemoglobin. The reverse is also true. Individuals who have normal blood may present an exceedingly anemic appearance.

A few years ago a form of disease was described by Winternitz, of Vienna, as *anemia spuria acutissima*. A female servant who, in trying to mount a ladder, fell, suffered a severe nervous shock, and at once became extremely pallid. The pallor persisted, but on examination the blood was found entirely normal. This condition was believed to be due to disturbance of the vaso-motor system. Perhaps the same principle may apply to chorea and other nervous diseases.

The possibility of there being quantitative anemia in chorea is, of course, a mere theory, as there is no way by which the presence of quantitative anemia during life, or even after death, can be reliably determined. However, all the associated conditions and the experimental evidence point to the fact that quantitative anemia, if it ever exists, is very rare. There may sometimes be such a thing in progressive pernicious anemia. Dr. Stengel alluded to a case in which there was an extremely anemic and desiccated condition of the organs, in which the blood-vessels throughout the entire system were empty of blood, and in which the blood-count had been very low. Such cases are possibly instances of quantitative anemia, but in chorea the appearances are never of this character. There is not the same difficulty of obtaining blood from the finger; not the shriveled or shrunken condition of the tissues; not the apparent failure of the peripheral circulation present in cases displaying the external appearances of what would be expected of a quantitative anemia.

It is to be believed, therefore, that in cases of chorea there is only that amount of anemia which comes from some toxic or some general nervous disturbance. Choreia may be looked upon as a toxic condition, probably an infectious toxemia, and the existence of a moderate leukocytosis, as found in some cases, may or may not be taken as of some significance in this connection. Apart from the actual anemia, the spurious anemia or pseudo-anemia so often met with must not be ignored, and this for want of a better explanation may be ascribed to vaso-motor conditions. As many of the blood-examinations in cases of chorea are made in out-door clinics, and most of the patients are young persons, the examinations are in themselves unreliable to some extent. They are fallacious from the defects of the instruments used; and, furthermore, the excitation of the heart and of the circulation, consequent upon coming to the clinic, causes a peripheral corpuscular congestion (if such a term may be used), from the more vigorous action of the heart in driving blood into the

periphery; or there may be the reverse condition due to cold, with contraction of the blood-vessels which raises the blood-count by causing venous congestion. Therefore, there is probably a higher degree of anemia than appears in the examination, but decided anemia is unquestionably very infrequent in chorea.

DR. JAMES TYSON said that the entire compatibility of pallor with a normal composition of the blood is evident when we think of the pallor that attends the syncopal attack, which furnishes for a short time all the external phenomena of anemia. It would be an interesting matter to determine the condition of the heart in these cases in which there is an appearance of anemia in association with chorea while the actual blood-count and hemoglobin-measurement fail to disclose the essential conditions of anemia. We have only to consider a permanence of the conditions that prevail during a fainting fit, of course in a milder degree than in an actual faint, and we have those of a chorea and yet a normal composition of the blood.

DR. WHARTON SINKLER asked for an expression of opinion from those who have had experience in the matter of blood-counting and estimation of hemoglobin as to how much the results of examinations depend on the individual.

DR. ALFRED STENGEL said that he had made no study of the errors in blood-counting, but in a recent paper by Moyer (*Deutsches Archiv für Klinische Medizin*, Bd. lxvi) upon the errors of the hemometer of Fleischl, variations in results were attributed to fatigue, the personal equation, and the skill of the experimenter, as well as to defects in the instrument itself. In examinations made simultaneously by Dr. Stengel and a colleague some years ago with the Fleischl instrument a difference of ten per cent. was sometimes found. Gradually with increasing experience the error decreased.

Cosmetics of Castration.

The esthetically inclined editor of the *Medical Record* suggested some time ago that the unsightly void left by orchectomy should be filled by a celluloid testicle for cosmetic reasons. This suggestion (from a recent report of a discussion before the Chicago Medico-Legal Society) would seem to have fallen on fruitful soil. Discussing the question of castration of criminals, Dr. Gertrude G. Wellington remarked that a man castrated for disease wished something to take the place of the organ removed that would give him the semblance of manhood. The only thing that could be found were some balls of celluloid, but they each contained a little bell. She would advise that in habitual criminals and sexual perverts after castration, these celluloid balls with their jingling bells be inserted, so that as the man went about among women of the world the bells would proclaim him incapacitated.—*Medical Standard*.

PERISCOPE.

Dr. Burton Ward declares there is one infallible symptom indicating whether one is sane or not. Let a person speak ever so rationally and act ever so sedately, if his or her thumbs remain inactive there is no doubt of insanity. Lunatics seldom make use of their thumbs when writing, drawing or saluting.—*Medical Age.*

A method for the early diagnosis of pregnancy that has proved to be of considerable utility is that known as Hegar's sign. It seldom fails even as early as the sixth or tenth week. It consists in a change in the body of the uterus which becomes spheroidal in shape and soft to the touch, while the neck retains its tenacity and shape until much later. The uterus is thus palpated as a round, yielding body mounted on the straight cylinder of the neck. In connection with the cessation of the menses, disturbances in the digestion, pyalism, changes in the breasts, slaty appearance of the vagina and vulva in a primipara and varicose appearances around the external genital organs and on the lower limbs, the diagnosis of pregnancy is certain in the great majority of cases.

It has been decided by the Supreme Court of Illinois that the health authorities have no right to require physicians to report contagious diseases or births without remuneration. While the physician is morally bound to warn the community of danger when this can be done at a not unreasonable expenditure of time and labor, it is unjust to compel him to do so, and even to force him, under pain of imprisonment or a fine, to pay the postage on such notification. Of course, the State cannot afford to pay a large fee for such service, and neither would the physician demand it, but it would seem as though a compromise might be effected whereby the physician would receive twenty-five cents for each notification of a case of infectious disease or a birth. Such a plan is, or was, in existence in Connecticut, and we believe worked satisfactorily to both the State and its medical benefactors.—*New York Medical Record.*

Maternal impressions and heredity in their effect upon the unborn child have been discussed from all points of view, yet the following case, reported in the *Cincinnati Lancet Clinic* by Dr. W. H. Jones, of Henry, Ill., seems to have a bearing upon both points. The mother, an epileptic, nearly sixteen weeks before the expected termination of her pregnancy, fell upon a hot stove, severely burning the palm of her right hand so deeply that there was considerable contraction as a result of cicatrization. She was very much agitated and alarmed lest her child should be marked,

worrying more about that than her own recovery. Her alarm gradually subsided, though it never entirely left her. At term she was delivered of a healthy boy, but the fingers of the right hand were only two-thirds the length of the fingers of the left hand, the first and second fingers being grown together for half their length, the two hands differing in size only in length of the fingers. The trouble didn't stop with the hand, as the four smaller toes of the left foot were grown together their whole length, and slightly shorter than the toes of the right foot. There is no history of anything of this kind in the mother's family, nor did she know of anything among the father's relatives until after the birth of this child. The father, who is a strong, hearty man, has two cousins, in a family of five children, that have webbed toes, these being all he knows of in a large family relation.

New-born infants on the island of St. Kilda have been more than decimated for more than a century by a mysterious malady popularly known as the "eight-day sickness." So recently as 1865 it was reported that of 125 children, the offspring of fourteen married couples living on the island in 1860, no less than eighty-four died within the first fourteen days of life, a mortality equivalent to 67.2 per cent. The prevalence of the disease, says the *Medical Press*, has been variously ascribed to sudden variations of temperature, defective ventilation, lack of warmth, mismanagement of the umbilical cord, dietetic peculiarities, and intermarriage. Attempts have been made at various times to discover the morbid agent and to circumscribe its ravages, but with such ill-success that the natives came to regard the disease as a special dispensation of Providence, not to be fought against under pain of heresy. Attention having been publicly called to this lamentable sacrifice of human life, a fresh attempt was made in 1892 under the guidance of Dr. G. A. Turner, of Glasgow, who, on the assumption of its being a germ disease gaining access through the umbilical cicatrix, suggested an iodoform dressing applied on well-defined scientific principles. In spite of the apathetic resistance of the mothers this treatment soon put a term to the "massacre of the innocents," and in 1894 he had the satisfaction of learning that not a single infant had succumbed since the treatment was begun. This result is the direct outcome of the recognition by bacteriologists of the microbial origin of all forms of tetanus, tetanus neonatorum among the number. The immunity thus acquired is the more significant, seeing that during the period 1883-93 the deaths under the head of "idiopathic tetanus" numbered 103 in Scotland, and 147 in England, a total of 250 lives sacrificed to an eminently preventible disease.